

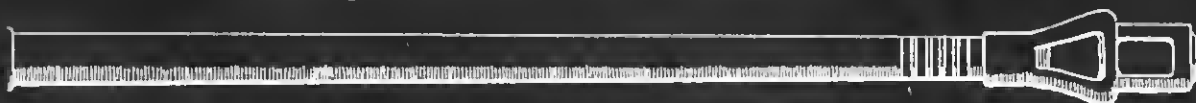


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A MAGAZINE FOR MILITARY VEHICLE ENTHUSIASTS
Volume 5 Number 3



Muzzle Blast



LETTERS • COMMENTS • NOTES • CORRECTIONS • ADDITIONS

More on Armored Cavalry....

Dear Sirs:

I would like to add a few corrections, additions and other information on the U.S. Armored Cavalry Troop in Vol. 4, No. 12 and Vol. 5, No. 1. I was an M-551 tank commander in an Armored Cavalry Regiment in Germany, and took part in the 'Reforger' exercise held in October, 1973.

Our Squadron turned in all its M114's (which was, as stated, a very poor vehicle) for M551's under the '5 for 3' program, and transitional training of the scouts in the new vehicle was completed in May, 1973. Since then, various new tactics have been tried and developed using the new TO&E. General organization is two Scout Sections of two M551's each, and the Headquarters Section consisting of the Platoon Leader and Platoon Sergeant, each with an M551. The Infantry 'tag along' with the Headquarters Section and is 'on call' when we need them for 'Grunt work', e.g. towns, woodlines, stationary security, etc. The M113 is always the 'gofer' track as it is the most reliable and not always needed at the front in actions such as 'The Delay'. The M113 is also used to check out some routes of withdrawal when necessary. The M106 mortar track is, as noted, to the rear ready to give fire support when needed.

The transition has been smooth, and the end result is 'A powerfully armed unit with good reconnaissance capability'. We do have the 'Tanker Syndrome'. It's not easy to be continually dismounting and mounting the 'Sheridan'. We are a CREW, all needed to fight the vehicle, and do not have a separate observer as per the M114. The European terrain with the many woodlines, valleys and high ground can usually be adequately observed without dismounting personnel, although we may in special circumstances.

Our main mission is still to observe and keep contact with the Enemy. With the very heavy firepower and range of our 152mm gun/launcher, we can do a lot to keep the Enemy from coming in contact with us! There is a temptation to stick around and slug it out with the MBT's, but after a few FTX's and umpire rulings, one soon realizes that the best tactics for a fairly light skinned vehicle is 'Hide, Hit

and Run'! The only real tactical problem comes from excessive noise from the Turbocharger system, which is a drawback for a reconnaissance vehicle. The acceleration, speed, maneuverability and cross country ability do a lot to make up for that deficiency.

The only real critical skill is that of the Gunner, which takes a thorough understanding of the sighting and fire control system plus lots of practice. Most can drive after just a few minutes of instruction and a willing trooper can become a proficient loader in just a short time. Good training is needed in the maintenance field to keep the fairly sophisticated vehicle combat ready. This too is easy if common sense and preventative checks (all laid out in the TM) are used...

As of October 1974, the 4.2-inch mortar was still with the Platoons, although withdrawing them to Troop level for Battery fire in certain situations was being considered. I believe it was for terrain and target reasons, and not for the possible aspirations of 'Young Generals' as Name Withheld suggested. We are more likely to get into 'trouble' if the 4.2-inch mortar is not there when we need it. One thing being considered is the addition of another M113 and another Infantry section. The many small wooded sections and villages which abound in Germany keep our 'Grunts' working hard, especially during route and area reconns. There was talk of bringing all Troop level ground surveillance personnel up to the Squadron level, but I don't know if this has been followed through on at this time. Our Maintenance Section had, until the middle of 1974, the M88 recovery vehicle, at which time it was replaced by the M578. The Commo Section has the M577 as its radio vehicle. There is also a water trailer in the Headquarters Section.

Our unit was part of an Independent Regiment. Most others are Divisional and their TO&E will most likely differ somewhat, and I have been told that some Cav units here in the states still use the M114.

Re. CPT McLemore's article on an M551 chassis Scout Vehicle, I would have to agree with Mr Patrick. The M113 is much more reliable, more easily maintained, quieter, could carry more Scouts more comfortably, and could be adapted

to carry a multitude of different weapons systems - as it has by ours and other Armed Forces around the world. The Captain states that the parts for the M551 are already in our supply system. It must have been a lot easier for a Captain to get parts than a Sergeant to have that aspect mentioned. From what I understand, the M551 is no longer being produced. Anyone who has served in one can understand why. It is a good vehicle if you keep ahead of it and are well supported by an excellent supply system and maintenance people. This is not often the case. Something else is needed.

The Magazine is Excellent. Hope you can print some more back issues so us new people can catch up.

Sincerely yours,

J. Brunick
Astoria, OR

...And a Reader Request...

Dear Sir:

In your latest issue of *AFV-G2* (Vol.5, No.1), on page 22, the author (presumably a staff member) mentions a publication called 'Tactical and Technical Trends'. Could I find out the exact unit of the US Army that published this? Any other info on this publication would be greatly appreciated.

Sincerely

Dennis R. Spence
Bloomfield, NJ

Editor's Notes: 'Tactical and Technical Trends' was a publication of the Military Intelligence Division of the War Department. During the period from 1942 to 1945, this agency published approximately 60-70 issues of TT&T on an irregular basis. Since they were not published in great quantities and were classified 'Restricted' [at that time], complete collections are rare today. I understand that microfilm copies of the publications are available from National Archives. Can any reader provide Reference Numbers by which these may be ordered?



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February-March 1975

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AFV's of Italy; the continuing series by Dr. Nicola Pignato

Between 20 and 21

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Cover:

An M8 Armored Car of 'D' Troop of the 42nd Constabulary Squadron, photographed on May 26th, 1948 near Grafenwöhr, Germany during an exercise with troops of the U.S. 1st Infantry Division. Note the unusual white markings and the Constabulary insignia prominently displayed to identify this vehicle as belonging to the 'Police' force of occupied Germany in this post-war period.

Photo Credit: U.S. Army

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AFV-G2 is a magazine, published monthly for Military Vehicle enthusiasts, with the purpose of gathering and disseminating information about Military Vehicles and their employment; to provide an opportunity for persons seriously interested in the history of Military Vehicles, in the modeling of these vehicles and associated equipment, and in the playing of Military Wargames utilizing miniature vehicles, to share ideas and items of mutual interest and to promote an interest and awareness in the subject of Military Vehicles.

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the yom kippur war

part 3 the egyptian front

by jerry asher

The Egyptians achieved as complete a military surprise as can be envisioned on Saturday, October 6th, 1973. From 1400 hours on, a coordinated offensive was initiated and sustained. Artillery gained fire supremacy immediately. Infantrymen of eleven brigades crossed the Suez Canal and moved inland, bypassing the Bar Lev Line bunker positions. Airmobile operations dropped commandoes and sealed the front line from its support elements. Engineering units of the Egyptian Army bridged the waterway and by 1600 hours, tank forces organic to the infantry divisions were crossing.

Caught by surprise, Israeli armor sought to accomplish, in the face of the Egyptian assault, what it had planned to do prior to any assault. The Israelis sought to deploy as if the Egyptian assault had not taken place. Schmuël Gonen, the Southern Front Commanding Officer, and Auraham Mendler, the Commander of Armored Forces, rushed to bring their forces into battle.

Throughout October 6th and 7th, Israeli armor was committed in piece-meal efforts to regain continuous fronting with the bunker line. Thus, at 2200 hours on October 6th, one Israeli tank platoon (of three tanks) reported being one kilometer from the canal and engaging in a fire fight with Egyptian armor still on the west bank of the canal. Another tank platoon was engaged five kilometers from the canal at 2400

hours. In both of these actions, the Israeli thrust was blocked and two of the three tanks committed were temporarily knocked-out of action, either by tank gun fire or by RPG-7's.

In yet another instance, three Israeli tanks were destroyed, with the closest tank being 50 yards from the Kantara bunker. This tank continued firing in support of the bunker until it was completely surrounded by Egyptian infantrymen. One crew member pretended to be dead when his companions surrendered, and he later joined the Kantara bunker force, escaping back to the Israeli lines when that bunker was evacuated.

Armor commands cannot sustain this type of losses without losing their effectiveness. Thus, Israeli firepower throughout October 6th and 7th was decreasing dramatically, while Egyptian firepower in the Sinai Peninsula was accelerating rapidly as more and more troops and equipment crossed the waterway and enlarged the bridgeheads.

By committing tanks into action on such a piecemeal basis, the Israeli commander, Gonen, forfeited the possible psychological gain of a massed armored assault on any one

Above: A post-war Egyptian military review which illustrates T-54 medium tanks and their crews. Note the banded camouflage of sand and brown and the Soviet style helmets worn by crew members. Photo Credit: Egyptian Army

Egyptian unit. The Israelis indeed were providing the Egyptian infantrymen with exactly the type of problem that they had been trained to handle.

Several other events on October 6th should be kept in mind. Firstly, the Suez Front was not the only front that Israel was being attacked on. Secondly, Egypt had fired one 'Kelt' missile toward Israel proper, and by 2000 hours, four Syrian-fired 'Frog' missiles had struck near Yafi, Kfar Baruch, and Migdal Ha'emek in Northern Israel. This whole structure of missile warfare was new and it required reporting, interpreting and reaction. Thirdly, the other new ordnance systems being utilized by Egypt and Syria likewise required reporting, evaluation and reaction. The cost in men and materiel was critical until the reserves could be deployed, and answers found to the new enemy ordnance systems, and these answers communicated to the troops in combat. Lastly, the whole structure of Israeli deployment relative to the Suez Front must be considered. Mobilization in the Israeli Army was not just moving men to Bir Gifgafa or to the 'Parker Memorial' and then having them draw equipment. The administrative-technical 'box' of the Israeli Southern Command was located where it had been during the 1967 campaign - in the northern Negev desert, within Israel proper.

By the morning of October 7th, the Egyptians had managed to achieve the security of several bridgeheads, and they controlled perhaps 100 of the 180 kilometer front. Significant armored forces had been poured into these bridgeheads. Major General Saad Maamoun's SECOND ARMY had established beachheads opposite Ismalia; on the main road Ismalia - Tasa - Bir Gifgafa; around the El Firdan railroad bridge; and north and south of Qantara. Small numbers of amphibious PT-76 tanks had been used in the initial crossings here. Given the terrain, particularly the marshes closer to Qantara, these vehicles were well suited to their role. Their light armor and light 76mm gun, however, limited much further offensive use, since the Israelis were engaging them with their 105mm up-gunned M-48 'Pattons'.

T-54's and T-55's were coming across the canal and were being used to subdue the isolated Israeli bunkers of the Par Lev Line. This commitment of T-54's is illustrative of the caution that the Egyptians were to exercise throughout the war. Rather than rushing the tanks forward, exploiting the tactical surprise that they knew they had achieved, to tear into the Israeli main defensive line, or to thrust down the roads trying for a breakthrough, a greater priority was given to these tanks subduing the isolated bunkers and gaining a neater rear area.

The T-54's and T-55's involved in these tanks were,



Above: Assault troops climbing steel ladders up the eastern embankment of the canal. The steel ladders were planted at the top of the bank by commando units to assist regular infantry in gaining the top. Photo Credit: Egyptian Army.

however, those organic to the infantry divisions, and therefore were under direct control of infantry commanders. The 21st and 4th Armored Divisions were still deployed on the west bank of the canal on the morning of the 7th. This might partially explain the reluctance of Egyptian armor to take on the mission of a truly armored force.

Forward of the T-54's and T-55's, the Egyptian bridgeheads did include coordinated anti-tank defenses. Egyptian infantrymen were hand-carrying the RPG-7 anti-tank rocket. This one man weapon had an effective combat range of only 150 meters. In addition, the small size of its warhead limited the effectiveness of the weapon in knocking-out tanks. Two-man teams of infantrymen carried AT-3 'Sagger' anti-tank missiles which had a 3,000 meter range. These were relatively slow moving wire guided missiles which were potentially very effective against the Israeli armor. Anti-tank platoons of modified BTR-40 armored cars carried sixteen 'Saggers' per vehicle; volleys of from four to eight 'Saggers' could be fired from each vehicle. Such platoons included a command vehicle armed with one 14.5mm and one 7.62mm machine gun, and three 'Sagger' launching vehicles. Other anti-tank platoons were equipped with recoilless rifles in some numbers; these were primarily of 82mm or 107mm in caliber.

Similarly armed bridgeheads were to be found in the area of Major General Abdel Moneim Wasel's THIRD ARMY, which was located south of Ismalia. Wasel had committed an independent PT-76 amphibious tank unit, accompanied by BTR-50 armored personnel carriers on a swim across the canal at the narrows of the Great and Little Bitter Lakes. This amphibious force was badly mauled by Israeli M-48 'Pattons'.

By 1200 hours on October 7th, the first Israeli reserve troops were being committed to action. These reservists, essentially from reconnaissance formations of the armored commands, were the advance guard elements of the Israeli mobilization. Twenty-three hours after the war erupted, Israeli reservists had a) gotten the mobilization messages, b) moved from wherever they were to an assembly point, c) were transported to their bases, d) drew equipment, e) been moved 150 miles, f) been deployed, and g) were counterattacking! In small amounts no doubt, and many may have represented the men who were called up in the four hours prior to the combined attack, when mobilization was first ordered, this mobilization and movement of reserve troops can be judged a remarkable achievement for any nation.



Above: An Egyptian photo showing Engineer troops blasting a path through the sand embankment on the eastern side of the canal. Photo Credit: Egyptian Army



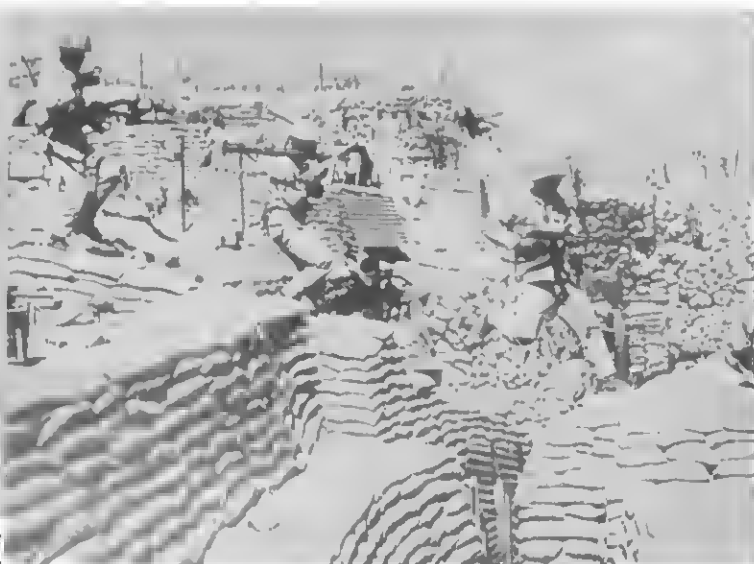
Above: The first Egyptian T-54's rolling across the canal on pontoon bridges. These tanks were organic to the infantry divisions. Photo Credit: Egyptian Army

These reservists were committed within the context of augmentation; raising the strength of units which were already in the fight. They did not represent a new force on the battlefield. During the next four hours, the 116th Infantry, the 190th Armored and the 14th Armored Brigades would still bear the brunt of the fighting, but the reservists, fighting around Kantara, were tangible additions to Israeli forces in action.

The fall of darkness on October 7th signalled the first Israeli reappraisal since the Egyptian attack had begun. The 190th and 14th Armored Brigades were given their first rest, and they began regrouping under Mendler north of Tasa. Division 'Sharon', with two Armored Brigades, one Paratroop Brigade, artillery, engineering and signal supporting units came on the line, from the Great Bitter Lake north to the El Firdan bridge. Division 'Aden', with three Armored Brigades and probably Infantry and Paratroop Brigades, began taking over north of the El Firdan bridge to Romani. A Paratroop Brigade was deployed to the north of Abu Rudeis to block any possible thrust to the south.

Sharon launched one counterattack to relieve the Israeli bunker opposite the El Firdan bunker, but this was repulsed by the Egyptians. Some time earlier, the Egyptian 3rd Corps captured the Israeli bunker just north of Suez. Reportedly, seventeen Israeli troops were captured at this position, which was called *El Ghabaret* by the Egyptians. During the night of October 6th-7th, the Israelis began pulling-out of selected Bar Lev Line bunkers.

The Egyptians added depth to their offensive by both action and inaction. Throughout October 6th, Egypt carried-on helicopter-borne operations on a considerable scale. At 1800 hours, October 6th, a reported 50 helicopters, each carrying 28 men, landed at the southern-most Israeli bunker of the Bar Lev Line. This position was on the quay at Port Tewafik opposite Suez, and was called the 'Mezah' by the Israelis. At the same time, Egyptian commando units were landed behind the main Israeli defensive lines, along the Gidi and Mitla Pass roads. The assault on the oil field at Ras Sudar by ten helicopters was broken up by Israeli aircraft at about the same time. Later that same night, a commando force was landed near Baluza on the El Arish to Qantara road. This last force, however, was contained by Israeli infantry, but not without it cutting Israeli communications to the northern-most Bar Lev Line bunker, which was located on the Mediterranean coast. This was the Israeli position code named 'Budapest', and it was to be the only Israeli bunker not to be given up during the war.



Above: Egyptian troops assaulting a Bar Lev Line bunker. The lead man is carrying an AK-47 while the second man has an RPG-7 rocket launcher over his shoulder. Credit: Egyptian Army

By keeping their armored divisions on the western bank during the time while their infantry units gained control of the east bank, the Egyptians added depth to their attack.

During the night of October 7th-8th, Israel assumed control over the sea, in a night action off the Nile Delta in which three Egyptian 'Osa' class missile boats were sunk. This naval action followed an Israeli mauling of the Syrian Navy on the previous night. This victory assured Israel's opportunities to flank and disrupt Egyptian operations all along the coast of Egypt, and gave Egypt its first defeat of the war.

Egyptian operations on the 8th were a continuation of their efforts of the 7th. The isolated Bar Lev Line bunkers were pressed further, while on the fringe, Egyptian forces prevented Israeli armor from breaking through their lines. Division 'Aden' made the strongest Israeli counterattack yet, by striking with one Armored Brigade towards El Firdan and another toward the 'Budapest' bunker. Both of these thrusts were blunted, and in the afternoon, the El Firdan bunker was breached. Before nightfall, Israeli artillery and air strikes were ordered on the bunker itself to keep the Egyptians from entering the underground passages. Division 'Sharon', in a separate action, slashed toward Ismailia, coming up against the Egyptian 16th



Above: Egyptian-manned, ex-Soviet Katyusha rocket launcher shown firing a support mission across the canal during the first days of the attack. Note the camouflage. Credit: Egyptian Army



Above: An Egyptian artillery position on the east bank of the Suez Canal. Note that this gun is not dug-in and has only limited sand bag cover from enemy fire. Credit: Egyptian Army

Infantry Division, without much effect.

Sometime during October 7th or 8th, 50 armored vehicles of the Egyptian THIRD ARMY tried to strike from Port Tewafik toward the Abu Rudeis oil fields. This force may have been trying to assist the remnants of the Egyptian commando force near Abu Rudeis. However, Israeli aircraft operating outside of the Egyptian missile umbrella covering the canal had no trouble in stopping this effort.

In general, Israeli air power was not particularly evident on the Suez Front during this period. Several factors account for this. One, the air power was needed against the Syrian drive, which was launched over a far shorter distance. Two, the Israelis had learned from the Summer 1970 air battles that the combination of Soviet missiles (the SA-2, SA-3 and SA-4) were deadly. The added SA-6's and SA-7's, combined with the ZPU-4 quad 23mm guns, had on Saturday, October 6th, proven their worth. Thirdly, the Egyptian's success in bridging and moving the bulk of her infantry to the east bank minimized what could be gained by air strikes. This is not to say that Israel did not utilize her air force well during this time frame. Rather, Israel used the available air power to contain the Egyptians if they tried to move out from under the missile umbrella. In short, Israel followed a course of action designed to maintain



Above: An Egyptian T-54 and dismounted infantry move forward in a combined-arms attack. The soldier in the foreground carries an RPG-7. Credit: Egyptian Army.



Above: An Egyptian SU-100 Assault Gun shown moving up to reinforce the canal bridgeheads. Note the large amount of dust. Photo Credit: Egyptian Army.

general air supremacy over the Sinai and Israel proper, with high risk missions only as necessary to support Israeli forces directly involved in fire fights.

During the night of the 8th, the Israelis continued to pull out what they could from the Bar Lev Line. One 33-man unit burst out of its position, were met by Israeli Centurions, and rode safely back to their lines.

Egyptian helicopters, which were basically regrouped and reorganized on the 7th, began airlifting commando forces south and east of Qantara. Israeli air power broke some of these three helicopter air assaults, but was not able to prevent some forces from being landed.

The regrouped Israeli 190th Armored Brigade launched a counterattack toward Qantara on the 9th of October, pushing ahead without artillery or mechanized infantry support. They were stunningly ambushed by the Egyptian forces airlifted in during the previous night. At least 34 Israeli tanks were destroyed, and Colonel Assof Yaguri, the brigade's commander, was captured in the fighting. Further south, an Israeli armor sortie from the Mitla Pass area was blocked by the Egyptian THIRD ARMY units. On the other hand, an Egyptian armored thrust from just north of Suez toward Mitla Pass was in turn repulsed by Israeli forces.



Above: Knocked-out or abandoned Israeli M-48's. These are probably some of the vehicles of the 190th Armored Brigade, lost in the October 9th counterattack. Credit: Egyptian Army.



Above: This photo shows an Egyptian T-54 with a mine clearing attachment moving forward through a defensive position, accompanied by infantrymen. Note the 82mm recoilless rifle in the foreground. Photo Credit: Egyptian Army

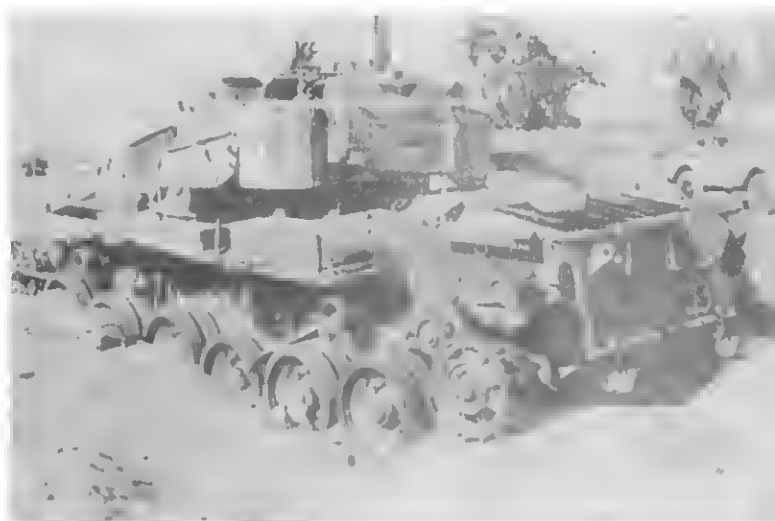
Radio Cario announced on October 9th that her forces had destroyed 82 Israeli tanks in the fighting to date. It is unclear if this total includes the losses of the ambushed 190th Armored Brigade.

Throughout the 9th, the Egyptians consolidated their positions. On the east bank, she now deployed the SECONO ARMY with three Infantry Oivisions, one Mechanized Oivision and one Independent Tank Brigade. To the south in the THIRO ARMY sector, she deployed two Infantry Oivisions, one Mechanized Oivision and one Independent Tank Brigade equipped with T-62 medium tanks. On the west bank, her 4th and 21st Armored Oivisions were kept in reserve.

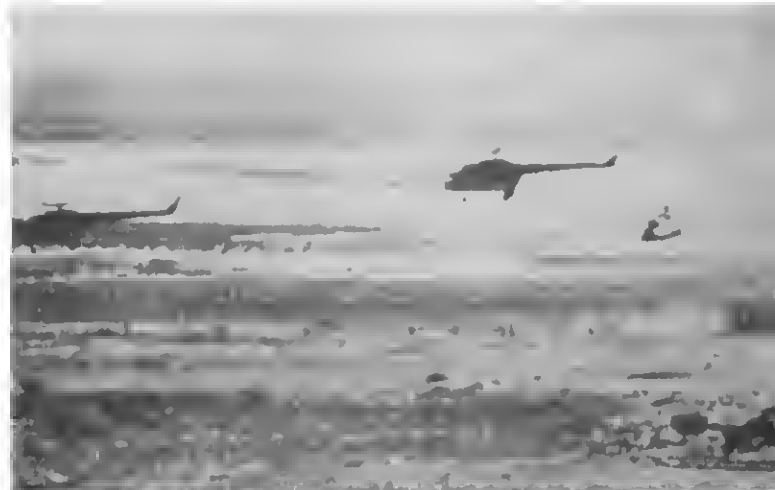
The Israelis, with the completion of their withdrawal from the Bar Lev Line, settled down to waiting. By the 8th, Israel had augmented her one Infantry and two Armored Brigades with at least six Armored and two Paratroop Brigades. Ouring the evening of the 10th, Israeli airmobile forces were committed in raiding west bank encampments. Ouring this time frame, Israeli pressure on Syria had been mounting, and in reaction, the Egyptians on October 11th began moving their two armored divisions across the canal. Giving themselves a day to march, regroup, clean-up (and perform maintenance), and deploy, by the 13th of October, Egypt was in a position to expand her bridgeheads.....



Above: One of the more interesting Egyptian vehicular modifcations to come to light; this photo shows an M3 Halftrack carrying a 107mm recoilless rifle. Note that the rifle is still on its wheeled carriage. Credit: Egyptian Army.



Above: Destroyed Israeli Centurion which has ohviously been hit a number of times by tank gunfire. Credit: Egyptian Army.



Above: Soviet helicopters shown landing Egyptian commando units behind Israeli lines. This type of airmobile operation was attempted on several occassions during the war, with mixed success. Photo Credit: Egyptian Army.

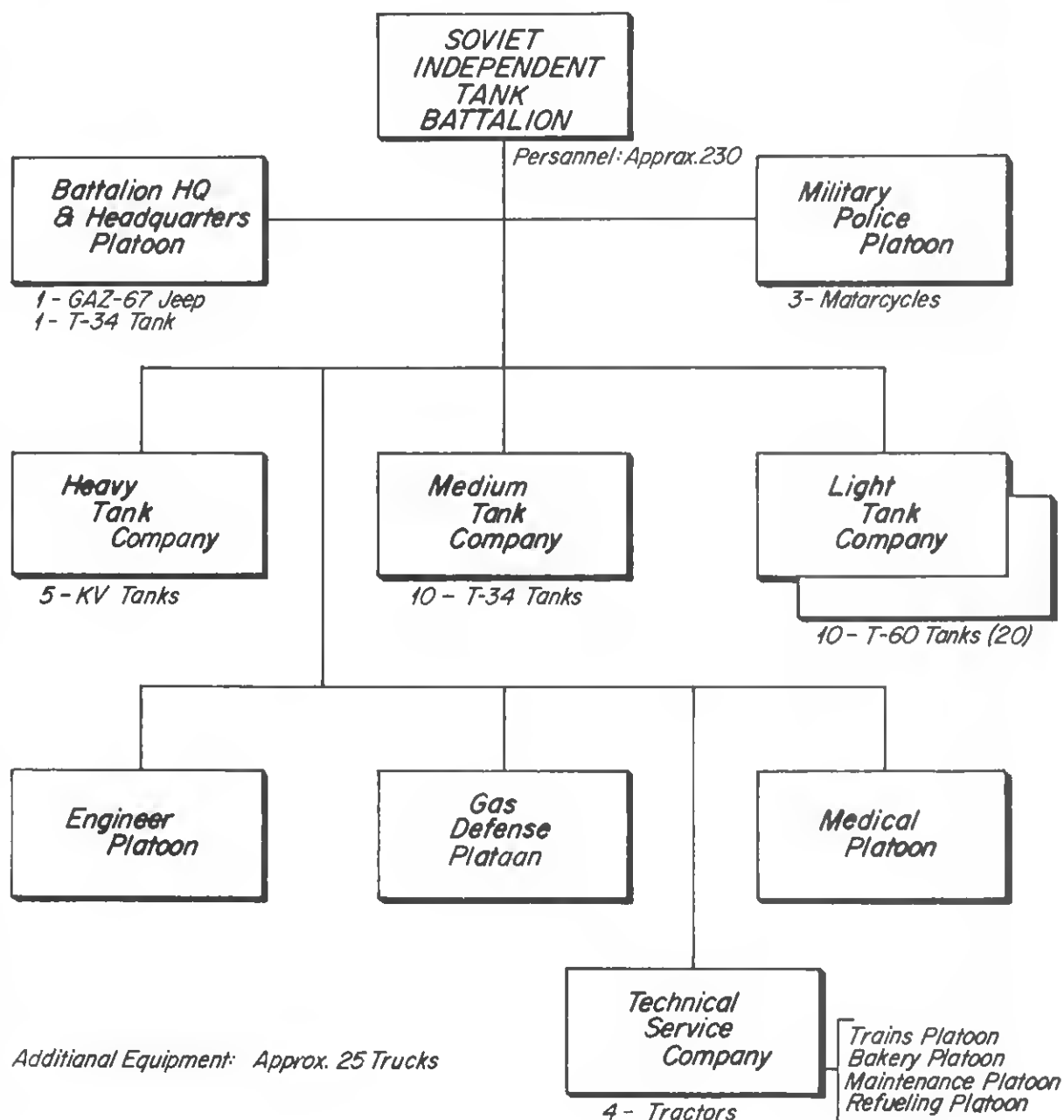
EDITOR'S NOTES: The photographs in this article, while generally poor in quality, out of focus, and too dark, are from an Egyptian Army source. It appears that, due to their lack of quality, they were not used by western press sources too illustrate articles on the Yom Kippur War. The photographs are unusual in that they illustrate Egyptian military equipment and techniques [such as the use of high pressure water hoses on the canal banks], and thus shed light on the Egyptian conduct of war. For these reasons, AFV-g2 has used the photographs to illustrate this portion of our Yom Kippur War series.

The author has indicated that he is interested in hearing from readers with comments and/or criticism on the article series. Please address any such comments to the author, care of AFV-G2, and they will be forwarded to him.

ORGANIZATION CHART:

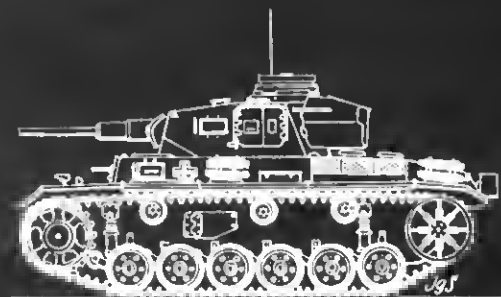
SOVIET INDEPENDENT TANK BATTALION

DATE: WINTER 1942-43
by W.Larson & J. Steuard



Source: OKW; Abt. Fremde Heere Ost: "Kriegsgliederung eines selbständige Panzer-Bataillon"
Natl. Archives, T78, R486, Frame No. 6470462

ARMOR MODELS IN REVIEW



Peerless/Max's M3A1 Armored Cavalry Scout Car; a commonly used reconnaissance vehicle, in 1:35th scale.

Reviewed by James Steuard

The M3A1, although considered obsolete, was the principal armored car with which the U.S. Army entered World War II. It soldiered quite capably until 1943, when it was replaced by the M8 Armored Car. Organization charts in AFV-G2 have illustrated a few of the roles in which the M3A1 served. After it was replaced by later vehicles, quantities of the M3A1 were furnished to other nations (including Britain and Russia) under Lend-Lease, and the vehicle is still in operation today in several smaller nations of the world.

This latest kit by Peerless/Max is very welcome, as it is the first model in any scale of this vehicle, which was one of the most popular American vehicles identified in our recent survey. The Max model is an excellent replica of this vehicle and is probably the best example available of the state of the art in plastic kit manufacture. Priced at \$8.50, the kit should prove very popular with armor modelers and U.S. Army enthusiasts.

The Max M3A1 kit scales out to an extremely accurate 1:35th scale, without any real deviations that I could find. The chassis and underbody detail have to be seen to be believed.... with over 30 parts to depict the shock absorbers, springs, muffler and exhaust pipe, propeller shafts, axle housings, transmission, tie rods and steering mechanism. The two-piece tires are excellent and they accurately duplicate the originals, even to the correct tire size. For once, the tires and wheel assemblies fit over the axle spindles in a realistic manner. When assembled, the underbody faithfully duplicates the real vehicle, even down to the front wheel camber.

The M3A1's interior is very complete, featuring crew seats with separate cushions and backs. The cushions are patterned to depict cloth stretched over springs. The diamond (anti-skid) pattern flooring is faithfully duplicated as are all hinges and latches of the storage boxes. The instrument panel was clearly modeled from an original, but some extra work will be necessary on the glass-covered instruments to make them resemble the originals. All of the driver's controls are present, and the armored upper portion of the doors can be assembled in the raised or lowered positions. Door interior detail is complete as is tool stowage. The only fault in the interior that I could find is that no radio equipment is provided (although there is a central antenna mast. The machine gun mounting rail which runs around the interior of the vehicle is accurately depicted, and two 'skate' mounts are provided to carry the kit's machine guns. These consist of one .30-caliber and two .50-caliber machine guns. To accurately portray the early pre-war M3A1's, which carried one .50-caliber and two .30-caliber machine guns, you'll have to scrounge an extra .30-caliber and an extra 'skate' mount for it. Still, the extra .50-caliber in the kit will come in handy as it is far more accurate in shape than most kit supplied weapons and it can be used to dress up other models.

Incidentally, I should mention that the machine gun mounts elevate and swivel and there's extra ammunition boxes provided in the kit too. Another nice feature is the best example that I've seen of an M3 submachine gun (for the driver no doubt). A canvas top is provided as well as rolled-up tarps and packs, gas cans, and tools.

If I had to pick a weak area in the kit, it would have to be in terms of figures, even though Max has been making real progress in this area. Three crew figures are provided; these consist of a driver, a standing machine gunner and a seated passenger. Decals are provided for three different U.S. Army vehicles (a First Army headquarters vehicle, a 15th Cavalry [Third Army] vehicle, and an 82nd Cavalry Reconnaissance [2nd Armored Division] vehicle), several different British, Canadian and New Zealand vehicles, and even a set of Russian markings. There's an excellent selection here, even though there are only one British, one Canadian and one New Zealand registration number which would have to be used over and over again. All U.S. Army registration numbers are in white instead of the early-war light blue, however, since white was in use prior to late 1941 and after early 1944, these are still useable if you are depicting an early or a very late vehicle. I can't comment too much on the Commonwealth markings, but there are two sets for British Division headquarters and at least one for an artillery spotters vehicle. Also included is an American three-star general's rank plate (for use with the First Army markings). These decals are much more comprehensive than in previous kits.

All told, this is one of the nicest kits to have come out of Japan in some time. It can be compared favorably to any kit for good detail and accurate representation of the original. If you're interested in U.S. Army equipment, this is one kit that you can't afford to miss.

Bandai's T34/76 Russian Medium Tank in 1:48th scale....

Reviewed by Wayne Larson

The newest in Bandai's expanding range of 1:48th scale model kits is a superb rendering of an early version of the Soviet T34 medium tank armed with the 76mm gun. This vehicle was the mainstay of the Red Army's Tank arm during the first half of the war (from 1941 to 1943), when it was supplemented by 85mm armed versions built on the same chassis. In spite of the real importance of this vehicle, few modeling firms have produced the 76mm armed version. In fact, most of the T34 models produced to date have been more than a little inaccurate in detailing. Of course, the main reason for lack of accuracy is undoubtedly the lack of real vehicles on which to base the models. At any rate, Bandai's T34 is an accurate representation of this important tank.

In terms of scale, this new Bandai kit measures out a little on the small size... about 3-inches too narrow in width and

Continued on Page 36

HEINZ GUDERIAN

ON ARMORED FORCES



PART III.

EDITED BY MARK DIEHL

This, the concluding portion of the study on Heinz Guderian's thoughts on armored warfare before the outbreak of the Second World War, presents ideas on the support of the tank forces and the cooperation between arms. The interrelation of communications, reconnaissance and command, a principal factor in effective command of armored forces, is the first topic to be presented. In supporting armor, the use of engineers, the chemical arm - particularly in the employment of smoke via artillery, combat aviation, anti-aircraft, and the supply services will be similarly presented. Concluding this presentation will be Guderian's thoughts on the employment of infantry and artillery with the tank arm, possibly his most significant contribution to armored warfare theory, in the development of his combined arms approach.

ON THE EFFECT OF COMMUNICATIONS ON RECONNAISSANCE AND COMMAND

'Reconnaissance is of value to the command only if the results are reported in time. Therefore, the problem of equipping the reconnaissance unit with adequate communication requires careful study. Of primary consideration, in this respect, are the radio and radiotelephone. The number and radius of the communication means control the tactical employment of the reconnaissance squadron. To avoid interception and interference with radio communications, the trend is to limit its use as much as possible. Until contact with the enemy is established, reliance is placed upon other means of communications, such as the telephone, motorized messengers, and aviation.'

'Necessary reconnaissance and liaison with the other arms must be established. ...the reconnaissance should take up no more time than that of the other arms. Expert map reading, correct evaluation of aerial photographs, and, in certain instances, a personal air reconnaissance of the zone of attack by the tank commanders must furnish the basis for the attack orders.'

'While the tank unit in action is directed by radio, small elements (such as companies and platoons) may be guided by visual signals.'

'The width and depth of tank units and their motorized support weapons on the march and in combat, the dust clouds raised by them, smoke, fog, and rough or covered ground prohibit the use of visual signals in controlling units larger than a company.'

'Up to the time the radio goes into operation, orders and messages may be transmitted by telephone, motorized messengers, and aviation.'

'The swift maneuvers over wide areas which the tanks

must execute even in combat make it impracticable to employ the field telephone except in quiet periods and during approach marches behind the front. Therefore, we find that all command tanks carry radio transmitters, and even the light tanks carry radio receivers.'

'...the command tanks, from brigade commander down to the platoon commanders, are equipped with both transmitting and receiving sets while the other tanks contain only receiving sets. The staffs frequently have at their disposal radio-equipped command tanks and a platoon of lighter tanks for messenger service.'

'Signal troops designated for cooperation with tanks will therefore consist primarily of radio elements. Their task is to maintain communication from the commander of the tank unit down to the regiments and independent detachments, with adjoining troops, with the air service, and, in certain cases, with the next higher commander in the rear. Abbreviated codes and special signals must be used in order to assure speedy delivery of messages and orders. To this end, signal detachments permanently assigned to tank units must receive special equipment and training.'

'Maneuver being rapid and it being necessary for the commander of a tank unit to be at the head of his command, only armored signal vehicles that possess a high mobility and full cross-country ability can meet his demands.'

'The command of tank units from an airplane... presupposes that control of the air over the zone of attack is established in advance. Also, it requires faultless radio communication and a special type of airplane.'

ON THE CHEMICAL ARM

'Smoke screens are becoming more and more important as an adjunct to the tank attack. Three main forms of employment can be recognized: 1) smoke projectiles fired by artillery in position during the preparation and at the beginning of the tank attack; 2) smoke projectiles fired by self-propelled artillery accompanying the tank attack; and 3) smoke produced by the tanks themselves.'

'There is nothing new about the first method. It is used to blind enemy observation. So, too, screens are laid down between the advancing tanks and localities suspected of harboring enemy troops or anti-tank guns. This enables the tanks to approach the enemy unobserved or outflank and invest him without drawing fire. Smoke may also be used for purposes of deception.'

'When smoke is fired by self-propelled artillery accompanying the tanks, the fire is executed by platoons or batteries. These guns travel immediately in the rear of the forward tank

waves and seek to blind any anti-tank guns that put in their appearance. Smoke projectiles are fired by trench mortars or by guns of 105mm or larger.'

'Originally, great results were expected from the method of tank concealing themselves by self produced smoke. It was soon found, however, owing to the conspicuousness of its source, the smoke tends to reveal the position or course of the tanks. The tanks travel either within the smoke or - still worse - are clearly outlined by the screen they have just laid. Therefore, it is only under the most favorable weather conditions that this method can be used in the attack. On the other hand, it may serve to facilitate a withdrawal.'

ON ENGINEERS

'The tanks have given the combat engineer some knotty problems to solve, especially in getting them over streams, marshes, and soft ground, and in removing obstacles, particularly mines. Minor tasks of this nature may be carried out by the regimental pioneer sections, but major obstacles will usually require entire units of specially trained and specially equipped combat engineers.'

'Where engineers work in cooperation with tanks their jobs will have to be accomplished in great haste and in sight of the enemy. If they are to reach their place of activity and be effective they must be protected by tanks.'

'Combat engineers will find another field of activity in operations against hostile field fortifications. A tank attack on field fortifications can be successful only if the size and strength of the obstacles do not exceed the capacity of the tanks. Whatever the obstacle, both the heavy and medium tanks are capable machines.'

'If the tanks are unable to negotiate the obstacles the engineers must go into action....'

'There will be frequent calls for demolitions and excavations for the purpose of overcoming or enabling stalled vehicles to move on.'

'Engineer units must be specially trained to recognize obstacles and schooled in ways and means of removing them. Particular emphasis should be placed on the removal of mine barriers.'

'Frequently they will be employed in advance as a precautionary measure.'

'...cooperation between tanks and engineers will be most successful if the latter are familiar with the characteristics of the tank and possess the requisite equipment. Irrespective of this requirement, however, the entire corps of engineers must train for cooperation with tanks in offense as well as in defensive action.'

ON COMBAT AVIATION AND AIRBORNE INFANTRY

'Combat aviation can lend considerable support to a tank attack. ...today, owing to the great improvements in anti-tank defense and to the mobility of the enemy's motorized and armored reserves, the employment of air forces against ground targets becomes increasingly important. By attacking such targets as mentioned and lines of communications, known locations of troops and headquarters, air forces will render it practicable for the ground attack to penetrate speedily the hostile zone of defense. Particular pains must be taken, however, to synchronize the actions of the two arms in both time and space.'

'Landed in proper time, parachute troops may seize vital points in rear of the hostile front and then establish points of support and supply bases to assist the breakthrough by the tanks. Parachute troops working in cooperation with tanks may seriously damage and interfere with the hostile services of

supply.'

ON THE SUPPLY SERVICES

'The supply problem is the ball and chain of the tank commander. ...tank units cannot fight indefinitely without drawing ammunition, rations, and fuel; nor can they stay in action without medical service, repair shops, and replacements.'

'The more far-reaching the plan of tank employment, the more vital and the more difficult this problem becomes. ...it is of paramount importance that fuel and ammunition be supplied covering elements as soon as they enter the zone of hostile fire. Furthermore, since supply trains offer a prime target for the enemy's armored attack, the attached covering elements must have a liberal allotment of anti-tank weapons. On occasion it may even be necessary to withdraw armored cars or tanks from the front and assign them a protective role with the trains.'

'When operating as part of an army, tanks are supplied by the army; when operating independently, they require a separate service of supply and a mobile base of operations.'



ON ANTI-AIRCRAFT DEFENSE

'Since tanks will quickly attract the attention of hostile aviation, an anti-aircraft defense must be provided. Tanks can contribute substantially to this defense by an intelligent use of their own weapons and by skillful camouflage.'

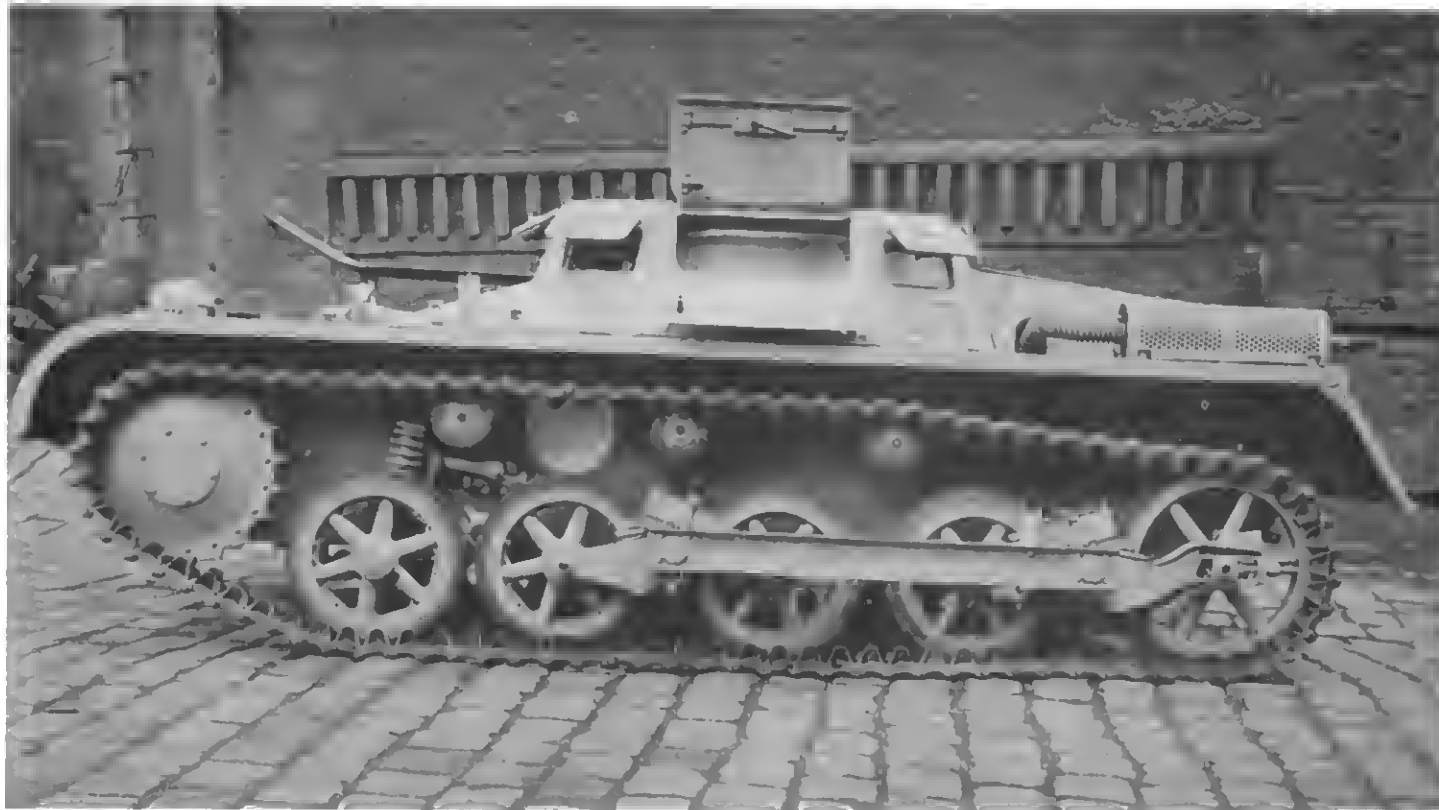
'Since most of the support weapons of tanks are not armor protected, separate anti-aircraft weapons must be furnished them. This also applies to all combat trains.'

ON COMBAT ARMS

'... tanks working on their own or in conjunction with infantry could never achieve decisive importance... until the other weapons on whose support they must inevitably rely were brought up to their standard of speed and cross-country performance. In such a formation of all arms, the tanks must play the primary role, the other weapons being subordinated to the requirements of the armor. It would be wrong to include tanks in infantry divisions: what was needed were armored divisions which would include all the supporting arms needed to allow the tanks to fight with full effect.'

'In the matter of cooperation between mechanized forces and other arms there exists two directly opposing views. The

Continued on Page 35



The German Panzerkampfwagen I.

by James Steuard

During the early 1930's, the German *Reichswehr* (or Army as it was then known) determined to arm its growing forces with a modern armored fighting vehicle. Based on this determination, the Army Ordnance Department (*Heereswaffenamt*) issued a contract in mid-1933 to five German companies, asking them to develop a competitive design for a light tank. These firms, Krupp, MAN, Daimler-Benz, Henschel and Rheinmetall-Borsig, completed their designs in late-1933, and after thorough examination by the *Heereswaffenamt*, a suitable design was adopted, based on the Krupp proposal. All of the companies, though, continued to be involved in the project, and after numerous changes, the first three test vehicles were produced in December of 1933 by the Henschel company. As stated, these three vehicles were based on the Krupp chassis design, using a running gear assembly borrowed from Carden-Loyd. The production facilities of MAN, Henschel and Wegmann soon became involved in chassis production of the series vehicles. The initial production of these vehicles was disguised under the code name '*Landwirtschaftlicher Schlepper*' (Agricultural Tractor) and the vehicle itself was known as the *LaS IA* [Krupp]. In this case, the name 'Krupp' indicated that the vehicle was powered by the air-cooled, horizontally opposed Krupp *M 305* engine, which developed 57 horsepower at 2,500 r.p.m. These vehicles were later designated '*Panzerkampfwagen MG* [Sd.Kfz. 101], *Ausf. A*' by the *Wehrmacht* in 1938. It could be easily distinguished by the suspension, which consisted of four road wheels with a trailing type rear idler. The rear three road wheels on each side were connected by a beam

(or girder) which assisted in springing and load distribution. Even with this arrangement, the vehicle had a harsh ride and was prone to pronounced vibration at the higher road speeds. The tank's small, off-set, one-man turret contained twin MG13 rifle-caliber machine guns and the vehicle's armor plating was only sufficient to stop small arms fire. One hundred and fifty of these light tanks were constructed between mid-1934 and the end of 1935.

As soon as the new tanks reached troop units, it became evident that the *LaS IA* was seriously underpowered and that engine reliability was not its strong point. As a result, a major redesign was instigated in order to install a more powerful and reliable engine. This new redesign was designated *LaS IB* [Maybach] and it featured the water-cooled, Maybach *NL 38 TR* engine, which developed 100 horsepower at 3,000 r.p.m. In order to install the larger Maybach engine, it was necessary to increase the length of the vehicle, and the width of the engine compartment was increased in order to hold the larger accessory package (the radiator, fan and shrouding in particular). The *Panzerkampfwagen Ib* vehicles could be identified by the five road wheels and the elevated rear idler, which was raised from the trailing position in order to keep the track-ground contact area identical to the earlier version. A similar beam system was used to link the rear four wheels on each side; this assisted in springing of the suspension. In addition, a fourth return roller was added to assist in smoother upper track travel. As a result of these modifications, the vehicle had a much better ride and it was marginally faster



Opposite: A factory photo of the hull and chassis of the Panzerkampfwagen Ia which clearly shows details of the suspension. Note the three track return rollers, the spring arrangement and the beam linking the rear road wheels. The exhaust system on this vehicle consisted of flexible tubing from each cylinder bank of the horizontally-opposed engine; this flexible tubing led into a muffler on top of the fenders. Also note the opened visors and the hinging entry hatch. Credit: G. B. Jarrett Collection

Above: A factory photograph showing the hull and chassis of the Panzerkampfwagen Ib. Note the additional road wheel and return roller and the raised rear idler. While the fighting compartment area remained nearly the same, the engine area

(since weight had been increased, it was all the new more powerful engine could do in terms of improved performance). As reworked, the light tank was reasonably fast, reliable and efficient as a training vehicle in which to test, modify and standardize the *Blitzkrieg* armored tactics which were the basis for the German campaigns in Austria, Poland, France and the Balkans.

In terms of production, manufacture of the *Panzer I.* reached its peak in 1935 and declined from then until 1941 when it stopped. Almost all of the vehicles produced in 1940 and 1941 were converted or used to build command vehicles and self-propelled anti-tank guns, as the vehicle was deemed obsolete as a tank by this time. At the start of the invasion of Poland (September 1939), 1445 *Panzer I.*'s were available for deployment, and combat quickly illustrated their inadequacy both in terms of firepower and armor protection. In some cases during the Polish campaign, it became necessary for the light tanks to be escorted by heavier vehicles to insure completion of assigned missions. Since heavier tanks were becoming more and more available (as their production was increased), combat employment of the *Panzer I.* was slowly terminated. By the start of the French Campaign (May 1940), the cannon-armed *Panzer II.* was supplanting the *Panzer I.* in terms of availability and many of the lighter *Panzer I.*'s had been relegated to training roles. Approximately 500 of the vehicles though saw combat, out of a total available number of 1077. During the period from 1939 to 1941, training became the most important

was rather extensively redesigned for the larger power plant and its water-cooling accessories. Note the stenciled vehicle data plate on the side of the engine compartment. This later vehicle had a rear muffler arrangement which was fed by a single flexible exhaust pipe. Credit: G. B. Jarrett Collection. Below: This photo shows two German mechanics replacing the track of a typical Panzer I. Note the skeleton type track and the small diameter track pins which connected the links. By close examination, one can see the single drive sprocket teeth and judge how they engaged the track. Credit: Author's Collection.

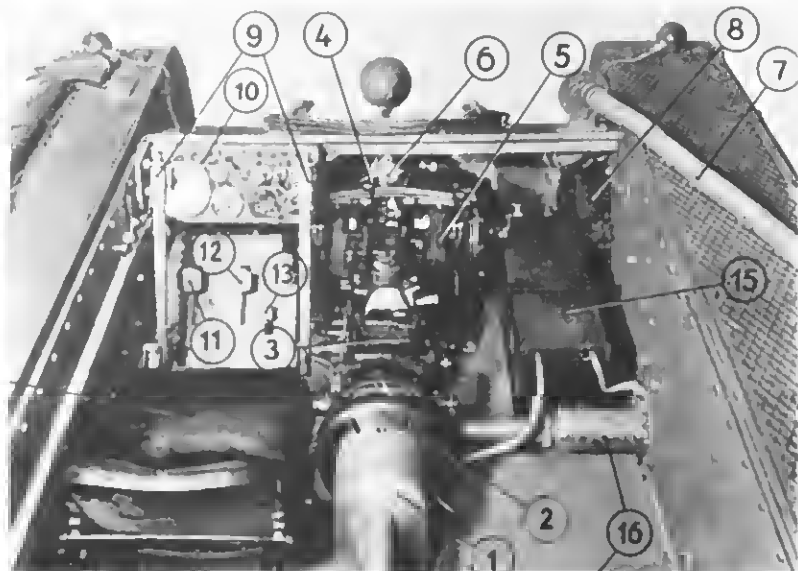




Above: A pre-war photo of a Panzer Ib. crossing a standard German Army pontoon bridge. The standing figure is cautioning the tank driver as the vehicle is crossing the 'join' between two bridge sections. Note the asymmetrical mounting of the turret which characterized the Panzer I. This mounting was necessary due to lack of interior space in the vehicle. Photo Credit: Author's Collection.

mission of the Panzer I. vehicles. There was scarcely a tank driver in the Wehrmacht who did not receive his training in an obsolete Panzer I. Stripped of the turret and upper superstructure, so as to carry passengers on raised seats, the training Panzer I's were used by motorized units of the NSKK to train these future tank drivers. The vehicles that remained in combat armored units were used almost entirely as reconnaissance tanks, where their lack of armor protection and firepower would not be as critical. In this type of role, service use of the Panzer I. continued until 1941 when it was officially replaced in reconnaissance missions by the Panzer II. (which was, by that time, also obsolete for all but reconnaissance tasks).

In terms of how a typical Panzer I. was laid-out, the photos on this page should be helpful, showing hull interior and component layout. The flat-topped, cylindrical turret was positioned so as to be offset to the right side of the tank hull. This positioning was adopted so that the Tank Commander-Gunner could stand in the open area on the right side of the drive shaft. The Commander stood in the turret, positioned between the twin machine gun armament. In the initial production series of vehicles, these guns had been box magazine fed MG13's, however, by mid-1934, these were being replaced by the new, belt-fed MG34's. As hull stowage was extremely limited, all extra ammunition for these weapons was carried on the top of the hull between the turret walls and the turret race (or opening into the hull). Turret traverse was manually executed by the Commander, with elevation of the machine guns being similarly accomplished, the weapons pivoting around trunions within the mantlet. There was no provision for independent elevation of either machine gun. The Commander had relatively poor visibility, observing to the front through a vision slit between the weapons, and to the sides through hinging visors. He entered and exited the vehicle through an upward and outward hinging split hatch on the right side of the hull; this was positioned directly opposite to the driver's entry hatch (which is shown in the photos on page 16



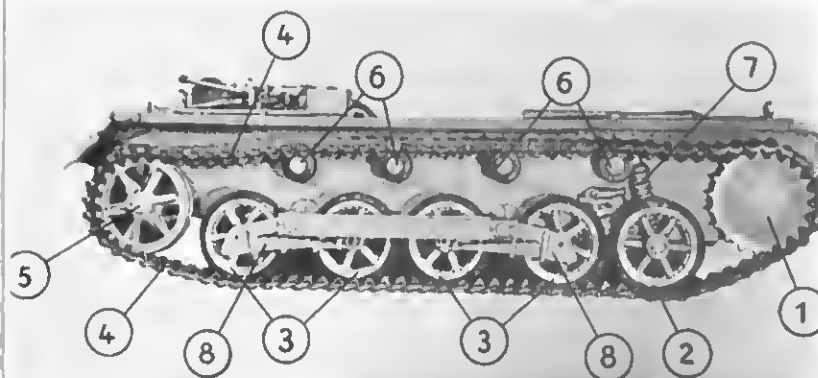
Above: A photo of a cutaway Panzer Ib., taken from the vehicular manual, showing the cramped driving quarters and lack of space which was typical of this small vehicle. The key to the numbered components is as follows: 1) Generator, 2) Generator-driven Fan used to circulate air throughout the vehicle, 3) Driver's Floor Board, 4) Gear Shift Knob and Lever, 5) Transmission and Right-angle Drive Housing, 6) and 7) not clear, 8) Final Drive Housing for right track, 9) Steering Levers, 10) Engine Tachometer, 11) Clutch Pedal, 12) Brake Pedal, 13) Accelerator Pedal, 14) [Number not shown] Driver's Seat, 15) Batteries, and 16) Front Road Wheel Axle Housing. The space beneath the numbers 1, 2 and 16 was where the Tank Commander/Gunner stood beneath the turret. Photo Credit: Author's Collection.



Above: Cutaway Panzer Ib. showing the engine compartment and rear of the interior. Comparison of this photo with the one above will show common features. The key to the numbers in this photo is: 1) Maybach NL 38 TR engine, 2) Radiator [note filler and overflow hose], 3) Engine-driven Cooling Fan with shrouding around radiator, 4) Flexible Exhaust Pipe leading to Muffler [not shown], 5) Magneto, 6) Oil-Bath Air Filter, 7) Carburetor or Injector System, 8) Generator [driven off drive shaft], 9) Front Axle Housing, 10) Filler caps for Gasoline Tanks, 11) Front and Rear Fuel Tanks, and 12) Driver's Seat. Also note the Jack mounted on the right rear fender and the Jack Support Block carried on the left rear fender. Photo Credit: Author's Collection.



Above: Another photo of a Panzer Ib. being ferried across a stream during pre-war maneuvers. In this case, the vehicle is being carried across the stream on one bridging section, prior to the erection of a bridge. Photo Credit: Author's Collection.



Fahrgestell eines Panzerkampfwagens

- | | |
|---------------------------|------------------|
| 1 Triebwerk | 5 Leitrad |
| 2 Vorderes Stoßfederglied | 6 Stützrolle |
| 3 Achsräder | 7 Stoßfederglied |
| 4 Kette | 8 Laufwerkfeder |

Above: A photo of a typical Panzer Ib. chassis and running gear, taken from an official German Army publication. This photo nicely shows the leaf spring arrangement behind the side beam: note how springs connect axle pairs. The front road wheel was sprung with the large coil spring numbered 7. Photo Credit: Author's Collection.

and 17).

Two conversions were commonly produced on the hull of the Panzerkampfwagen Ib. after it had become obsolete for combat usage. These consisted of the 'kleiner Panzerbefehlswagen' (or Panzerbefehlswagen Ib.) and the 'Panzerjäger Ib.'. The former vehicle existed as a mobile, armored command post which could be used by Battalion or Regimental commanders and staff officers who required such a vehicle for command while on the march or during combat situations. In this vehicle, the turret was removed and the upper superstructure was replaced by a box-like fixed superstructure which offered more room than in a tank. The vehicle's armament consisted of a single MG34 which was belt mounted in the front of the box-like superstructure. Two radio communications sets were

usually installed to provide for longer range communications as well as shorter range command communications within a company or battalion. The crew on these vehicles was increased to three; the driver was joined by the commander and an additional staff officer. These vehicles had prominent hatches on the left side of the superstructure for ease in entering or exiting and the commander had a large spit hatch on the top of the vehicle. The Panzerbefehlswagen Ib. continued in operational service through 1943, when it was replaced by command versions of the Panzerkampfwagen III.

The second of the conversions to be made on the hull of the obsolete Panzer Ib. was in the form of a self-propelled anti-tank gun. It mounted the captured (or confiscated) Czech 4.7cm anti-tank gun by positioning the weapon on top of the tank hull, which was cut open to offer more room. The drive train components were covered by a sub floor, upon which the gun crew stood. The gun and its crew were protected from the front and side by thin armor plates; however, there was no protection to the top and rear. The gun had a very limited traverse of only 15°, and this vehicle cannot be judged as being more than moderately effective. While the 4.7cm gun had fair penetration, it was generally obsolete by 1941 and the lack of good armor protection limited the usefulness of this conversion. Still, it extended the useful life of an otherwise obsolete tank chassis...

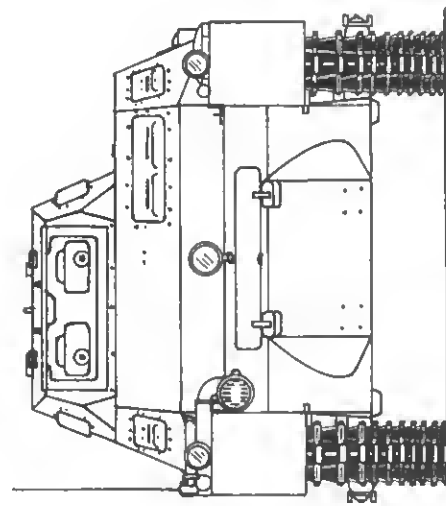
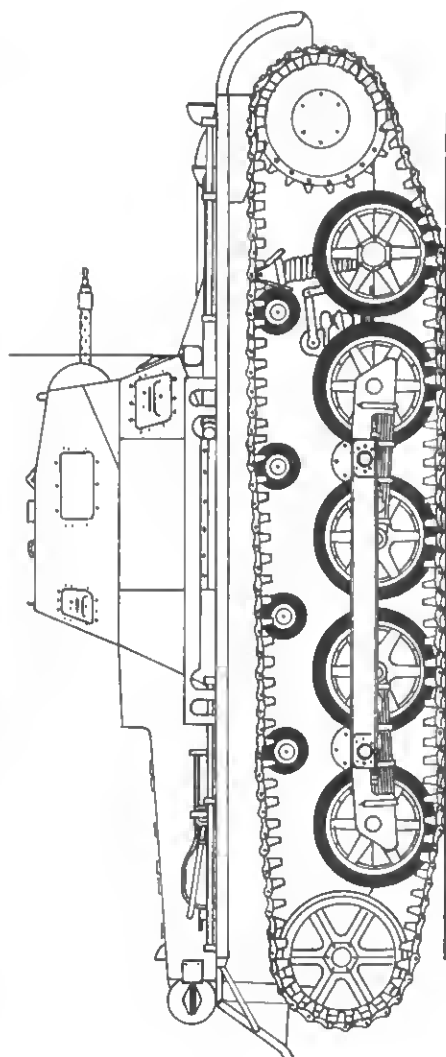
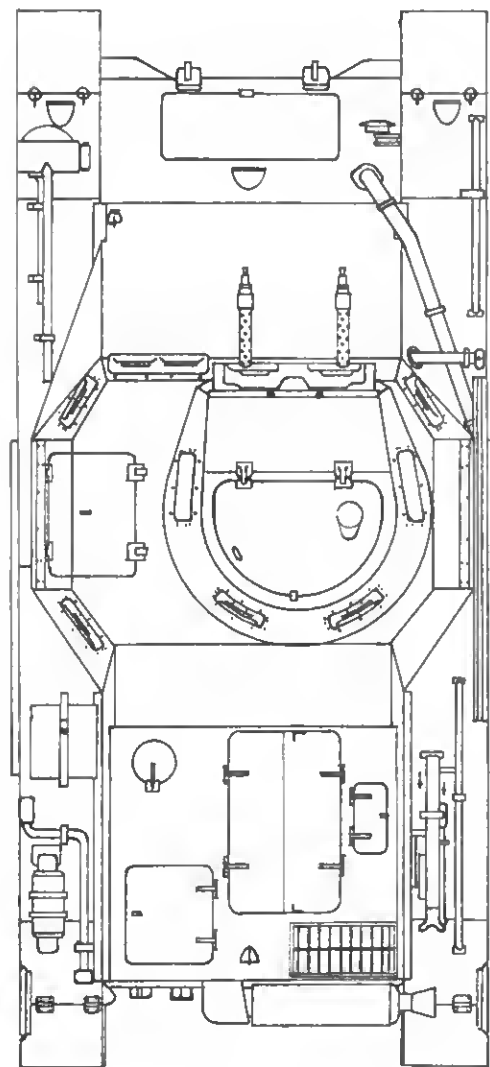
In an overall appraisal, the Panzerkampfwagen I. was an important vehicle in the German Wehrmacht's arsenal, as it provided a light, fairly simple and reliable tank which could be used in testing and training an armored force. Used to develop the Blitzkrieg tactics of World War II., the Panzer I. was obsolete before a single shot had been fired against it. However, it proved its worth in the pre-war period in which Germany formulated so many of its armored plans, tactics and techniques. It was too lightly armored and armed to sustain itself on a battlefield, but its value lay not in terms of combat effectiveness, but rather in terms of availability in a formative period of history....



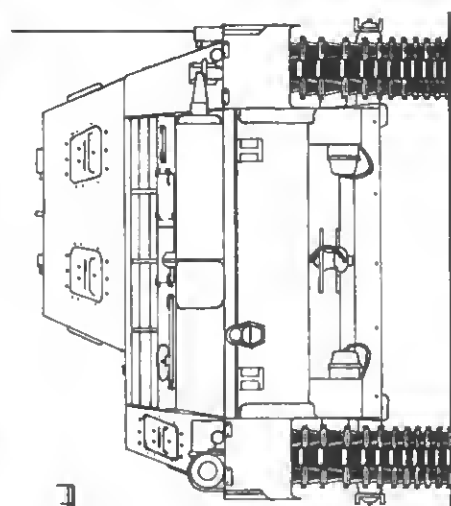
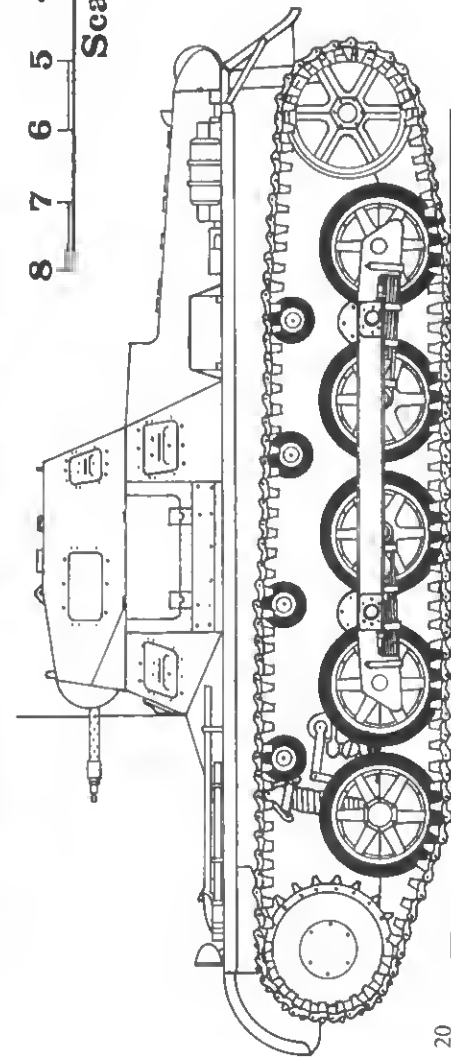
Above: A 'kleiner Panzerbefehlswagen' in action during the Polish campaign. Note the ball-mount MG34 in the superstructure and the prominent white recognition crosses which identified vehicles in Poland. Also note the antenna storage channel and the open entry hatch on the left side of the tank. Photo Credit: Author's Collection.

Panzerkampfwagen IB. Light Tank

Drawn by S.R. Cobb



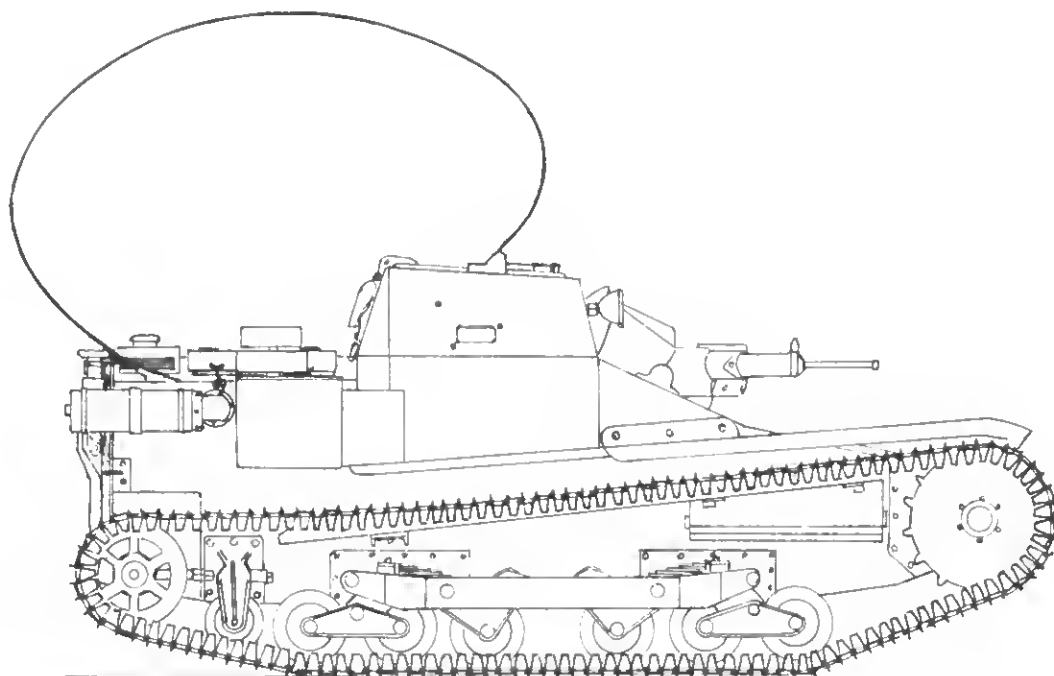
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Scale





Above: A 3/4-left front view of the C.V. 35 equipped with wireless set, taken in 1937. Note the unusual streaked camouflage.

In 1936, another version of the company command tank appeared, with the regular RF 3CV wireless, but without any armament. This vehicle possibly had a map table replacing the weapons and optical devices.





Above: An L-3r of the 4th Series in the Western Desert, photographed in 1942.



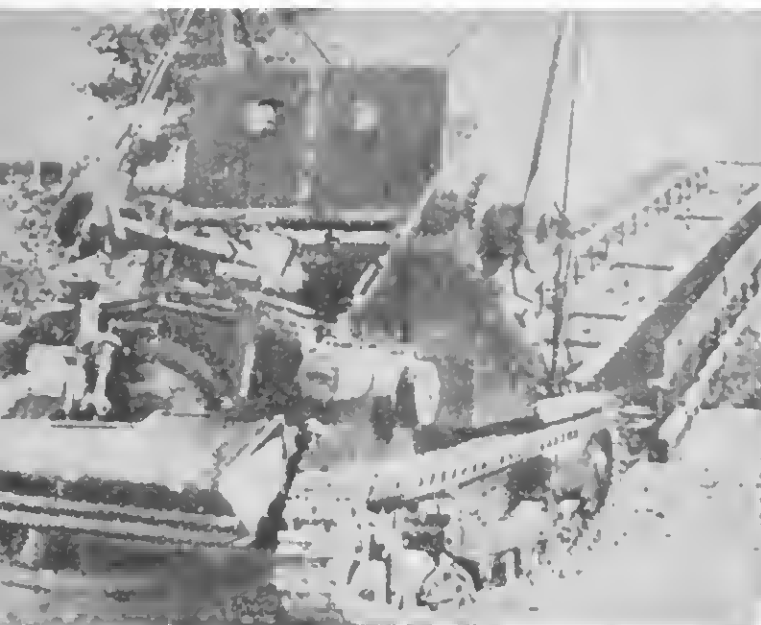
Above: A 3/4-right front view of the L-3r. This vehicle is one from the 3rd Series.

Bridgelaying Fast Tank (Carro Veloce Passerella): Developed by the "Servizio Studi et Esperienze del Genio" (Engineer Corps Studies and Experiences Service) and constructed by the "Officina di Costruzioni del Genio" in Pavia (Pavia Engineer Corps Workshop), this bridgelayer vehicle was demonstrated for the first time in August 1936, when two of them took part in the Great Maneuvers, which took place in the Irpinia area (east of Naples) during that period.

The first prototype, designated Carro Veloce Zappatore (Sapper Fast Tank), carried registration number RE 1576 (a II. SERIE vehicle), and it was soon followed by others, which were attached in 1936-1937 to the Engineer Corps Platoon of the 1st Mechanized Brigade.

This bridgelayer was a standard C. V. to which two wide-stepped, 7 meter long rails had been linked by hinges. This frame made-up a sort of bridge, resembling a ladder, by which L3 tanks could span a greater than 6 meter gap or climb a 4.5 meter step. During travel, the two rails were supported by steel cables which were wound on pulleys, and a part of the weight was discharged onto the ground through a dolly-wheel.

The bridging device was operated by the two-man tank crew from inside the vehicle. After the



Above: A rather poor photo of a C.V.P. in the act of launching its bridge. Note the fully extended bridge.



Above: The trailer towed by the Carro Veloce Passerello, shown loaded with the bridging sections. Note the tie-down system to keep the load from shifting.

passage of the tank unit over the bridge, the same tank and crew recovered the bridge for future use

This bridge, whose laying took only 7 minutes, could also be disassembled into sections and transported in a trailer towed by the tank itself. Its weight was 1000 kilograms; the laying equipment attached to the tank weighed 600 kilograms.



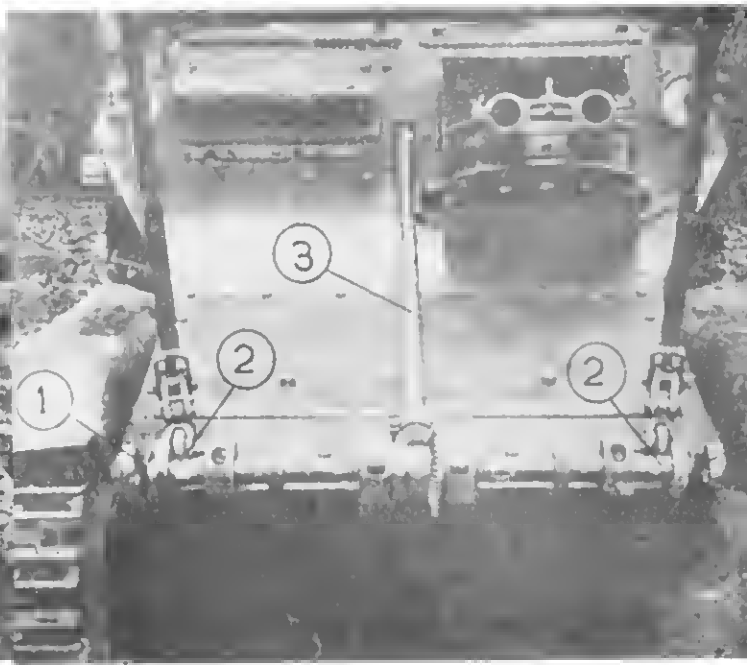
Above: A C. V. P. shown crossing its bridge after the laying operation. Note the front attachment points for the bridging unit.



Above: An emplaced bridge from a C. V. bridge-layer. Note the hanging cables by which the bridge could be recovered by the launching tank.



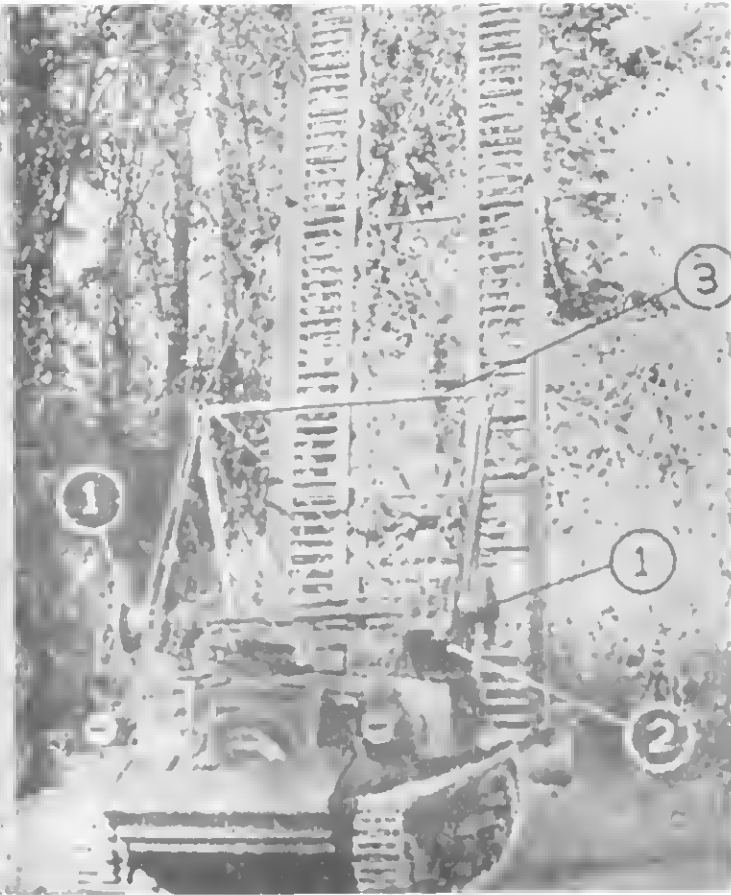
The photographs on this and the next few pages are taken from an official Italian service manual, and, while not of the clearest quality, serve to illustrate the functioning and operation of the bridging mechanism of the Carro Veloce Passerello (C. V. P.). Above, Left: A C. V. P. is shown in the act of positioning its bridge prior to spanning a gully. In this position, the C. V. P. is in an unstable condition, with the long bridging sections overweighing the



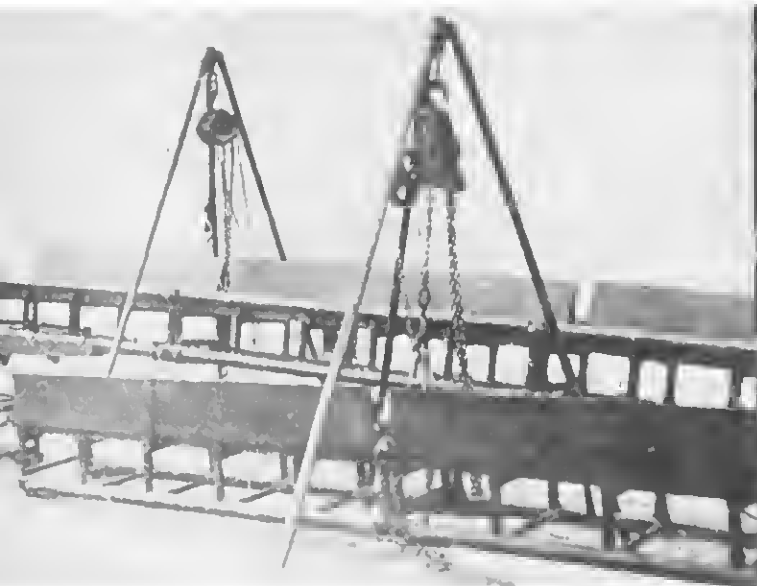
front of the vehicle. The number 2 indicates the dolly-wheel which serves to support part of the weight of the bridge during the approach to the site. The number 1 indicates the support arms of the dolly-wheel. This wheel is detachable. Above, Right: A view of the front of a C. V. P. with the bridge removed. This shows the drive shaft (1) and mechanism which is used to lower the bridge to the front as it is being placed into position.



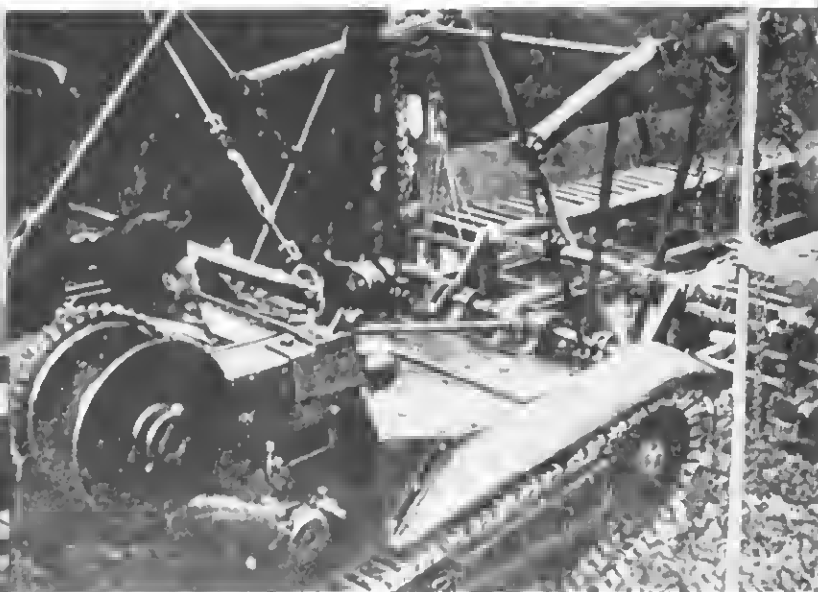
Above: A rear view of a C. V. P. with its bridge in a "launching" position. The numbers refer to parts of the winching mechanism. Note the spade arrangement on the rear of the vehicle, which is used to hold down the rear of the tankette when the bridge is extended to the front.



Above: A frontal view of a C. V. P. about to position its bridge. This photo clearly shows the dolly-wheel beneath the extended bridge sections. Note the support arms which connect the dolly-wheel to the bridge. This wheel arrangement may be disconnected from the bridge during bridge laying.



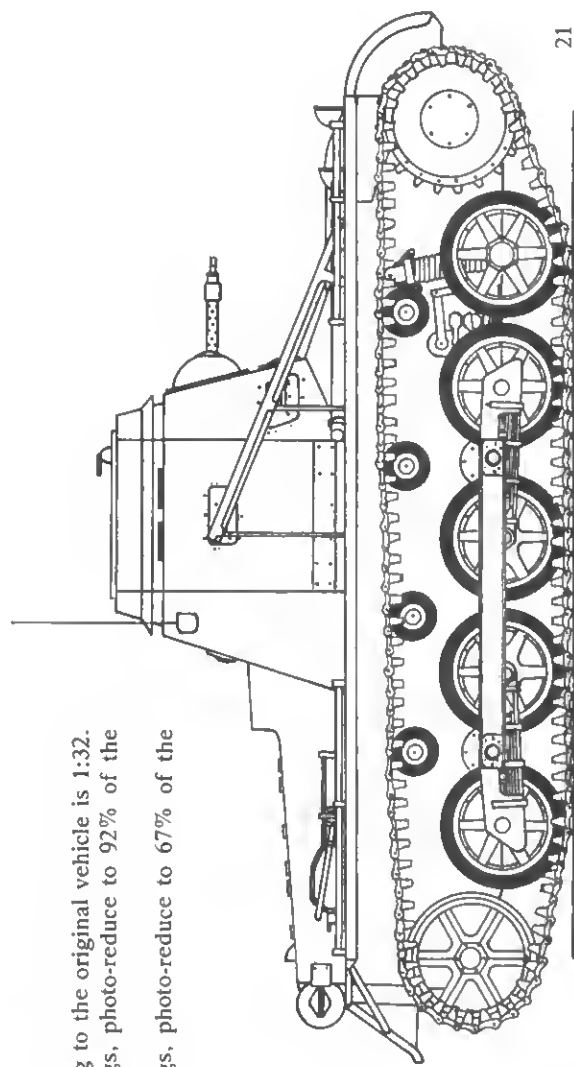
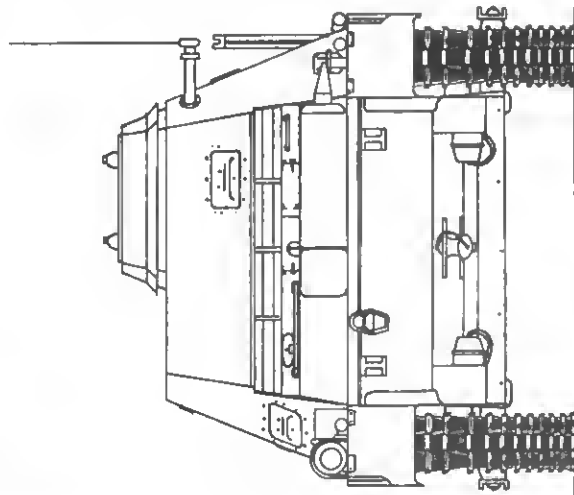
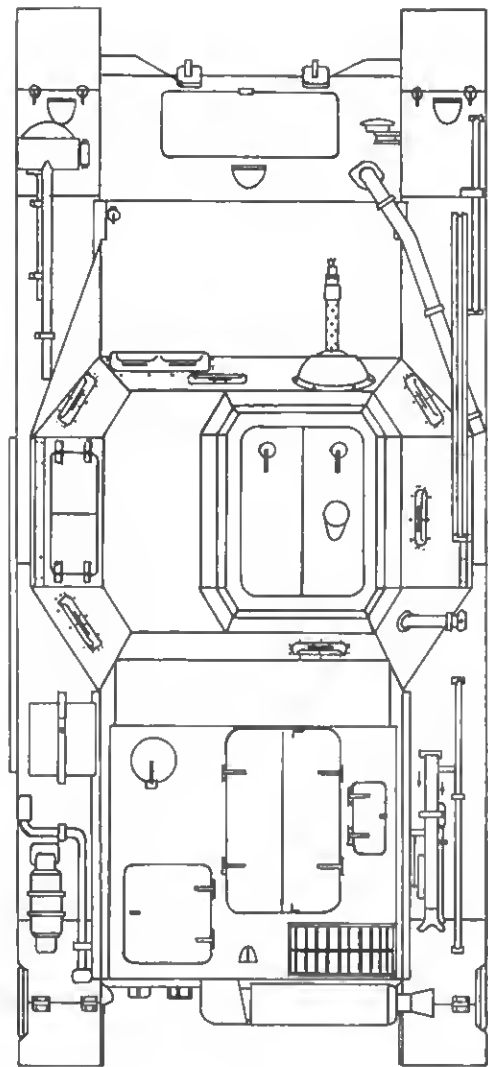
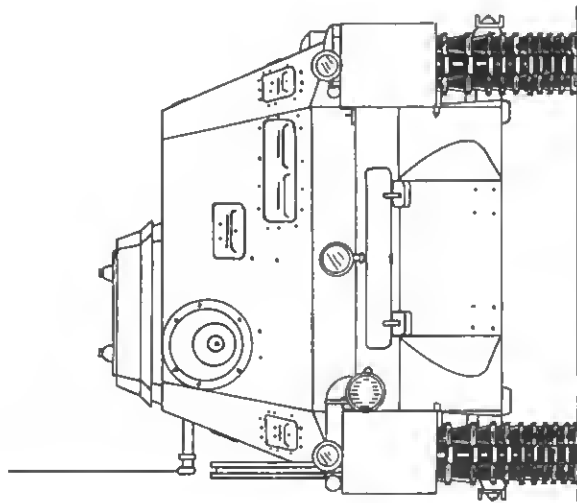
Above: This photo shows the portable tripods which are used to support and lower the end of the bridge which is closest to the vehicle. The background tripod is holding one bridge section in the air, while the foreground tripod shows how the block and tackle mechanism is used to lower the bridge section onto the ground.



Above: A C. V. P. is shown while disconnecting itself from the bridge, which has been lowered onto the ground by the tripod block-and-tackle systems, which can be seen on either side of the bridge sections. Note the arms of the crew member on the right, who has just lowered his block-and-tackle.

Panzerbefehlswagen Ib. Command Tank

Magazine Purchasers may have photocopies of these drawings made locally as an aid to their personal or commercial modeling, but purchasers do not have the right to distribute copies of the drawings to others.



Ratio of the size of this drawing to the original vehicle is 1:32.
To obtain 1:35th scale drawings, photo-reduce to 92% of the original size.
To obtain 1:48th scale drawings, photo-reduce to 67% of the original size.

Drawings of the *Panzerbefehlswagen Ib.* continue on Page 34

ARMOR IN PICTURES

'Armor in Pictures' is a photographic-article series to display reader-submitted material on military vehicles and associated models or dioramas. Readers are invited to submit their photographs of vehicles or models for inclusion in this series. Photos should be packed securely, preferably between sheets of cardboard to prevent folding and/or damage, and sent to *AFV-G2*, P. O. Box 293, La Puente, CA 91747, Attn: 'Armor in Pictures'. Credit will be given in the photo caption for all photos published and all photos will be returned after

publication, along with a copy of the magazine in which the pictures appear.

'Armor in Pictures' is also designed to serve readers as a forum for photo requests. If there's a particular photo reference needed, for modeling, for data, for accurate markings, etc., drop *AFV-G2* a note (at the above address) to let the staff know what is required. Our staff will attempt to provide the photos that the readers wish to see, and we'll also provide a list of requested photos that readers are searching for.



The photos above and below show a restored 'Ontos' self-propelled gun carriage owned by Sam L. George of Atlanta, GA. Since the government frowns on the private ownership of such things as 106mm recoilless rifles, the vehicle is sans weapons. The owner indicates that it's light and fast, and is lots of fun to drive. *Above, left:* An angled side view of the Ontos; note the exhaust and the engine housing. *Above, right:* The driving compartment of the Ontos viewed from the rear. At the



right is the engine housing, while the left fender shows on the left. *Below, left:* A front view of the Ontos; note the low silhouette. *Below, Right:* An M-24 'Chaffee' Light Tank of the South Vietnamese Army photographed in 1969. This vehicle lacked an engine and was employed as static bridge defense along Highway #4. The camouflage consisted of green and black bands (Photo credit: Mike Thompson).





Above: A photo of an M551 'Sheridan' diorama in 1:76th scale, created by Jeremy Kral of Suffern, NY. The vehicle on the left is Mr. Kral's conversion of the Airfix M551 to depict a 'Sheridan' Scout Vehicle as proposed in *AFV-G2*, Vol. 4, No.

12, differing only in upper hatch construction. The antennae are simply bristles from an old hair brush, while the figures are Minitank's tank commanders. The scene depicts operations of an Armored Cavalry Platoon in Germany.



Above: Two photos of an *Ersatz M10* model conversion constructed by Steve Zaloga from the Nitto 1:76th scale Panther kit. The left photo shows the pre-painted model with alterations showing as white plastic. Below: Two photos submitted by John A. Loop which shows Australian Army conversions of M113

Armored Personnel Carriers. The left vehicle was converted to mount the turret and gun from a Saladin Armored Car, while the right vehicle mounts the Commando Armored Car turret with twin machine guns. Details are lacking at present.





Scratchbuilding a 1:35th Scale **PANZERJÄGER Ib.** by John B. Wager

The first German 'tank destroyer' used in France, North Africa and Russia mounted a Czech 47mm gun on a *Panzer I* chassis. They weren't too common (only 132 were built altogether), but they served well as the first German self-propelled anti-tank gun, until phased out of service in the early part of 1942. Although scratch-building this vehicle in 1:35th scale is not an easy task, it should be some time (if ever) before a kit manufacturer comes-up with a kit for it.

This isn't a job for beginners, but if you have converted a few kits and have scratch-building supplies already at hand, all you need is lots of patience and a *Tamiya Panzer II* kit, for starters. Of these two requirements, patience is perhaps more important, because the job will take as long as construction of several kits. But then, it's also lots cheaper than several kits.

Templates, although the greatest help in getting started, should be supplemented by photos wherever possible. The interior and suspension of this vehicle do not have templates as such; for the construction of these areas, follow the photos and check your spare part's box.

From the *Tamiya Panzer II* kit, you'll need parts # 4, 6, 8, 13, 14, 22, 23, 24, 25, 27, 29, 31, 32, 44, 45, 46, 47, the tracks and the crew. Use .010 and .020 sheet styrene in constructing the basic 'shell', where the edges of the pieces will show, for a scale appearance. Use .030 or .040 sheet styrene for the hull to provide strength.

The suspension of the vehicle is the hardest part, and it should be constructed last. The parts involved are too small to

be helped much by templates, so follow the photos and proceed slowly and carefully. Drive sprockets are from the *Panzer II* kit, but first, cut off the ring of 'teeth', remove four of these 'teeth' and then cement the smaller ring back on the trimmed-out center. Road wheels are from the *Panzer II* kit, with all but the rim cut out, spokes and hubs constructed and added from sprue, and cemented to the spring assemblies. The rear idlers were pirated from an old *AMX-30* kit, but any similar wheel will do as well.

Other parts used here, but open to substitution, are a breach from the *Bandai 1:48th scale Hetzer*, the gun barrel and muzzle from a 1:48th scale *Sherman*, fenders with 'patterned' upper surfaces from any old German kit, and various interior parts. None of these are absolutely essential, but you should check your spare part's bin against the photos to come as close as possible.

The basic shape of the vehicle will take form in no time, but for a first rate model, little details such as rivets, straps, hinges, etc. will take much patience and time. When you're done, though, you will have a model worth all of the effort.

The following publications are helpful for photos and information:

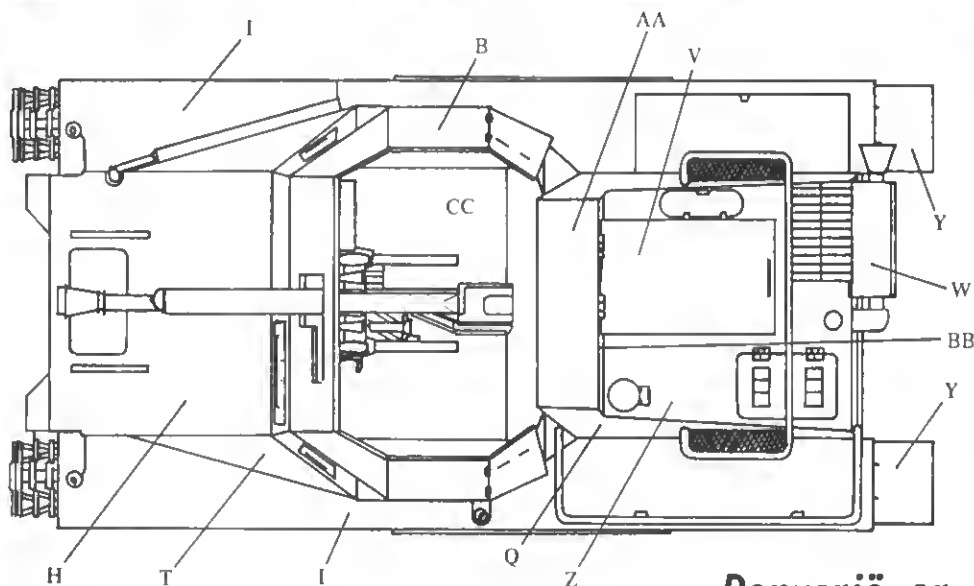
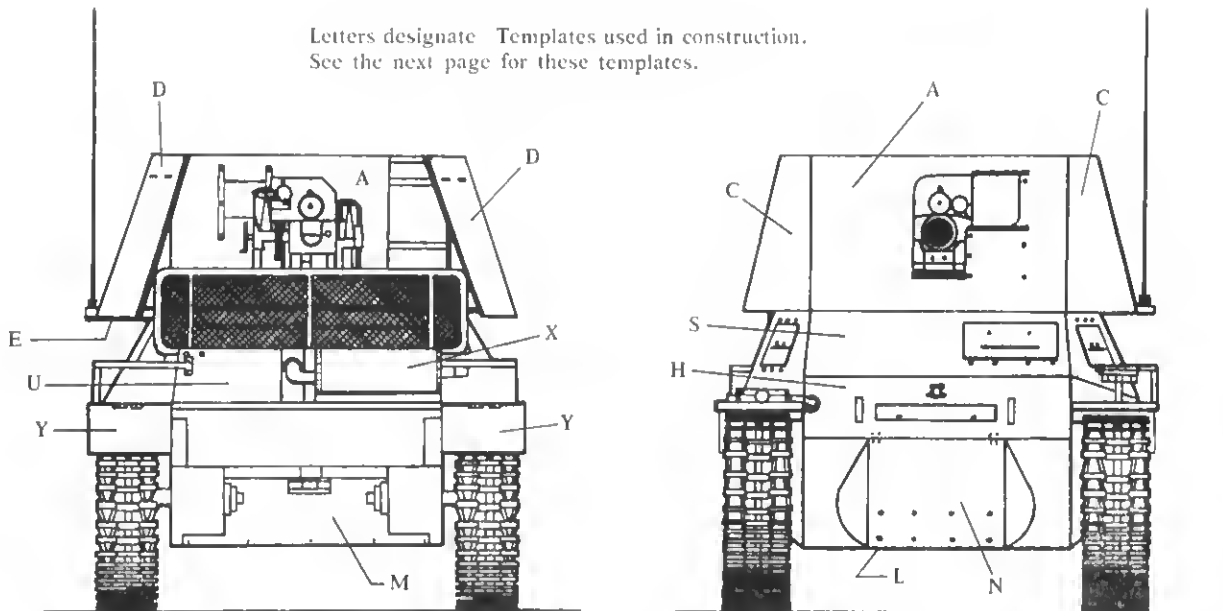
Bellona Military Vehicle Prints #1

Bradford, G. R., *Armor Camouflage and Markings - North Africa, 1940-43*

Spielberger & Feist, *Sturmartillerie, Part 2*

Photos Continued on Page 27

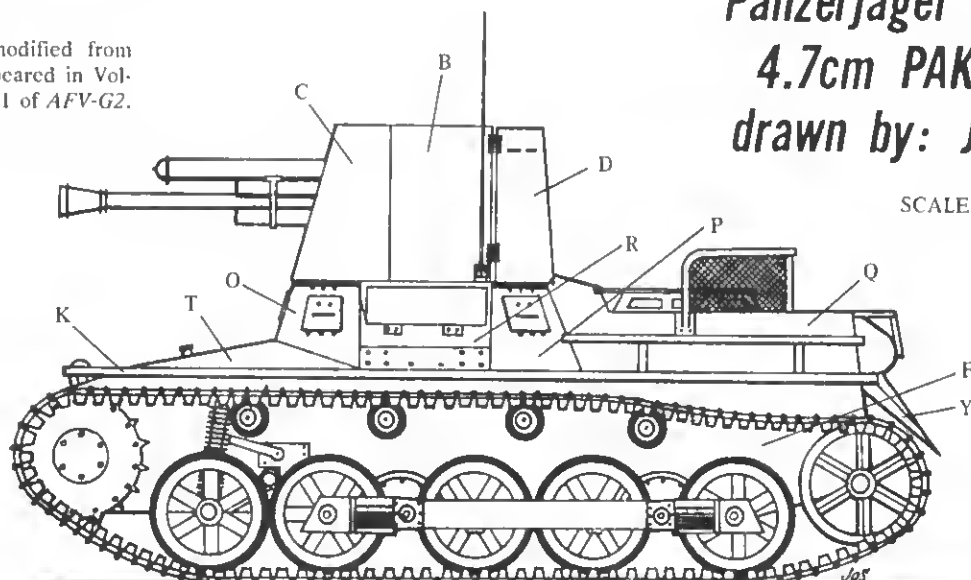
Letters designate Templates used in construction.
See the next page for these templates.

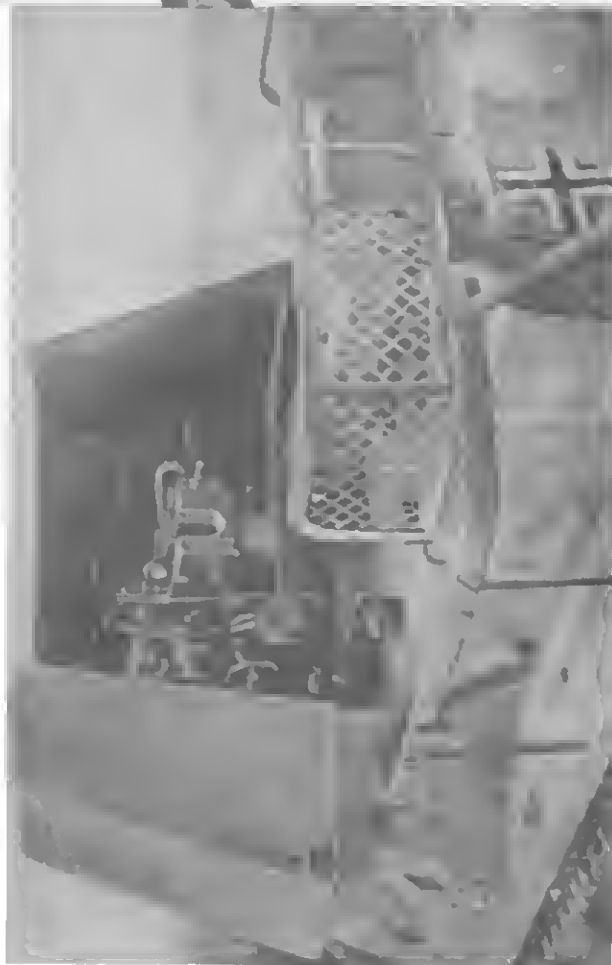


Drawings are modified from
those which appeared in Vol-
ume 3, Number 1 of AFV-G2.

**Panzerjäger Ib. mit
4.7cm PAK (t)
drawn by: J. Steuard**

SCALE: 1:35





Above: An often-used photo of the crew compartment of a *Panzerjäger 1b*, captured by the British in North Africa (in 1941). While not of the best quality, this is one of the few pictures to show details of the gun breach and interior. (Credit: Hutchinson's Pictorial History of World War II., via the author)



Above: A rear view which shows a number of details. Note the curved cover over the exhaust pipe and the rectangular cover over the muffler. The flared exhaust tip can be made by flattening the end of copper or brass tubing of the correct scale diameter.



Above: This high-angle photo shows details which will aid construction. The side rack is used to hold water cans; this rack and the one behind the engine compartment should be constructed from strips of .010 styrene, bent to shape and 'welded' together at the proper places.



Above: Another high-angle photo which shows the model and its diorama. Note the tool box on the right rear fender. Templates are not provided for this box but it can be easily fabricated from scrap styrene. Also note the rear deck construction.

COLOR 'N CAMOUFLAGE

M-8 Armored Cars in Europe
by William Platz & S.R. Cobb

During the latter half of the Second World War, the principal weapon of the U.S. Army's Mechanized Cavalry was the M-8 Armored Car. In all, 11,667 M-8's were manufactured between March of 1943 and April of 1945; and two of these vehicles are pictured here. The first M-8 Armored Car was used by the *82nd Cavalry Reconnaissance Squadron*, a part of the *2nd Armored Division*, at the time of the St. Lo breakout in Normandy.

Markings on this armored car were plentiful. On both sides, just above the stowage area, the vehicle's serial number, 'U.S.A. 6033442-S', was painted in white, 3-inch high lettering, as shown opposite. On each side appeared a unit code, painted in 10-inch high, yellow letters and numbers; on our particular M-8, this unit code was 'C-30'. On the left side, the letter 'C-' was painted on the front fender, and the numbers '30' were painted on the rear fender skirting just above the middle wheel. On the opposite side, these positions were reversed, so that the lettering would still read from left to right. The letter 'C-' was painted on the rear fender, and the numbers '30' were applied to the front fender. This coding indicated that our car was the 30th vehicle from 'C' Troop of the *82nd Cavalry Squadron*. Further troop identification was provided by an individual vehicle name, 'COLBERT', painted in 3-inch high white letters on the rear fenders just above the rear wheel. In the *82nd Cavalry*, all vehicles were apparently provided with names which started with the Troop letter.

On the front of the car appeared a 30-inch diameter white star, which served to identify the vehicle as 'Allied'. This was the sole star painted on the vehicle and it was positioned centered on the upper sloping frontal armor. On the left side of the vehicle appeared a typical Allied bridge marking; this consisted of a 12-inch diameter Insignia-Yellow circle, containing a black number '7' to designate the combat weight of the vehicle. This marking, although more commonly used by the British, was one of the markings adopted by the U.S. Army in areas where American and British units operated together. The above markings were the only markings to appear on the front of the M-8; there were no unit markings *per se*.

Unit markings did appear on the rear of our M-8; in fact, these unit markings were the only markings to be found on the rear of the M-8. The unit codes were painted in 3-inch high, white lettering, with the Division and Squadron numbers on the left side with a small triangle (which designated the Division as 'Armored') between the '2' and the '82'. No letter 'R' (for Reconnaissance) or 'C' (for Cavalry) appeared after the Squadron numbers. On the right side of the vehicle appeared the Troop letter and the individual vehicle number, separated by a short dash. This unit code was applied to the top of the rear face of the fender skirting.

This particular M-8 Armored Car was in action in July 26, 1944, as a part of *Combat Command 'A'* of the *2nd Armored*

Division. This unit, under the command of Brigadier General Maurice Rose, was to cover the left flank of the St. Lo breakout, by advancing along the St. Gilles - Canisy road. During this operation, they were opposed by elements of the badly-battered *Panzer-Lehr-Division*. 'C' Troop of the *82nd Cavalry* moved down the road in the van of 'CCA', under scattered mortar and artillery fire. At the outskirts of the town of Canisy, the few remaining Germans made a stand along a railway embankment. Faced with opposition, the armored cars withdrew to the flanks while tanks were brought up. Crossing the rail line beyond the German defenses, the cavalry troopers brought enfilading fire upon the German position, forcing the enemy to withdraw. Before dusk, 'C' Troop was rolling through the burning town. The armored cars were in their element - the pursuit of a fleeing enemy.

The second example of an M-8 had a far different background. The collapse of the Nazi government in Germany was total, and left the country without any form of civil control. Since the German police had been absorbed into the 'SS' and the defense of Hitler's *Reich*, they were therefore considered Nazi's until proven otherwise; and thus, they were barred from any official status. To provide order in place of the local authorities, and to enforce the regulations of the Allied Military Government in the American Occupation Zone, the U.S. Constabulary was formed.

On May 1st, 1946, the Headquarters of the *4th Armored Division* was redesignated as the *1st Constabulary Brigade*; and the *2nd* and *3rd Constabulary Brigades* were formed from various cavalry units and the remaining elements of the inactivated *1st Armored Division* at about the same time. By July 1, 1946, a *Constabulary Headquarters* and a number of special units were operational, as well as ten Constabulary Regiments. These latter units were composed of a Regimental Headquarters, with a Light Tank Troop, a Motorcycle Platoon and a Horse Platoon, and two or three Constabulary Squadrons. Each Squadron was mounted on its own light armored vehicles, being used a mobile police elements within the occupied zone.

Our particular M-8 Armored Car belonged to the *42nd Constabulary Squadron* of the *2nd Regiment*; formerly the Squadron had been a Mechanized Cavalry Reconnaissance Squadron (with the same number) as a part of Patton's *Third Army*. The Squadron was redesignated on 1 May 1946, and with the rest of the *2nd Cavalry Group (Mechanized)*, formed the *2nd Constabulary Regiment*.

The M-8 proved to be an ideal vehicle for this new role. (Indeed, several U.S. metropolitan police departments still used it as late as the 1960's.) It had good mobility and enough firepower for an effective show of force.

Constabulary markings were conspicuous. To begin with, a double white band completely encircled the upper hull of the armored car. Each white band was 3-inches wide and the two bands were separated by a 3-inch gap. The basic vehicle retained its standard olive drab paint finish, over which the white markings were applied.

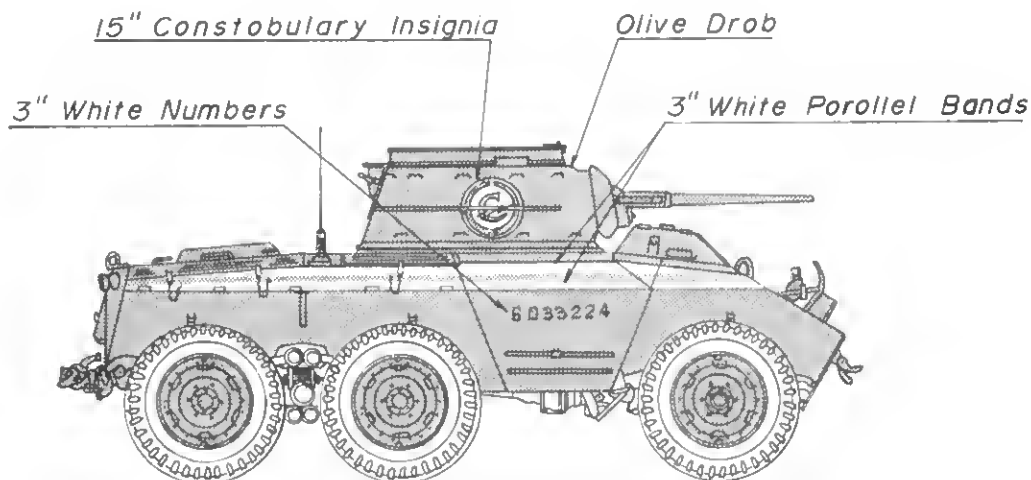
On the hull sides of the M-8 appeared the U.S. Army serial number of the vehicle; this appeared between the fenders directly below the double bands. This number was '6033224',

Continued on Page 37

INSIGNIA YELLOW - FS 33538

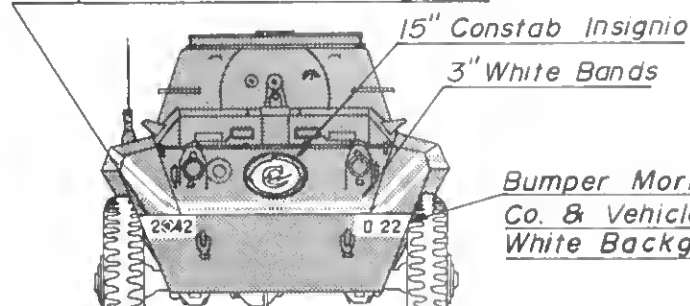
Floquil RR31 Reefer Yellow



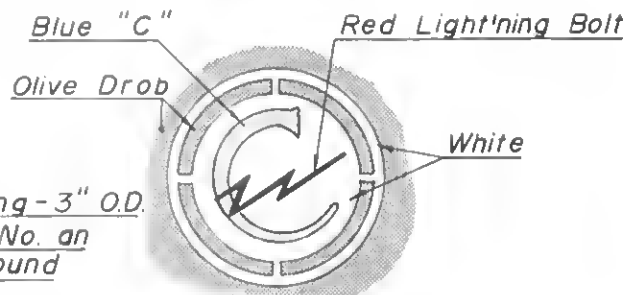


M-8, 48th Constobulary Sqdn., 2nd Constob-
ulory Regt. — Occupied Ger. 1948

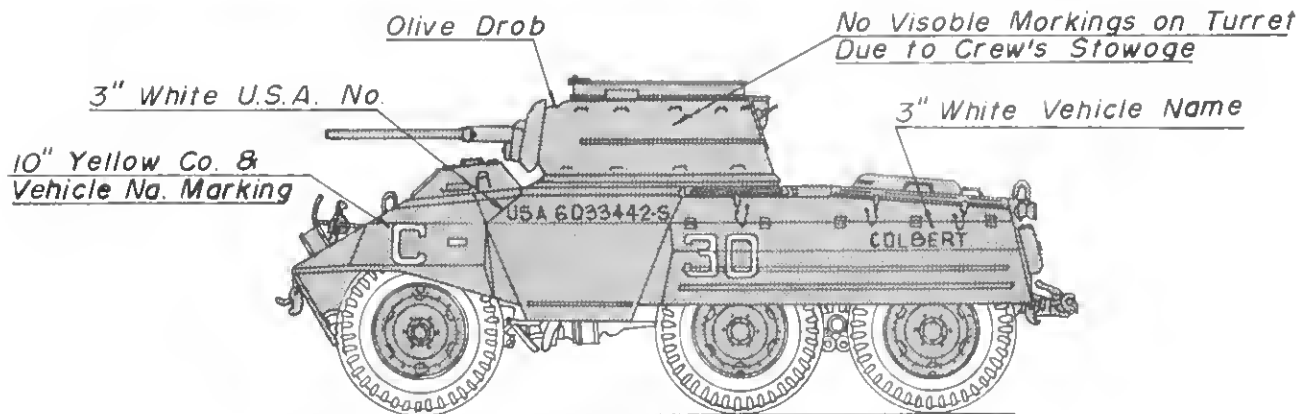
Bumper Marking-3" O.D. Regt.
& Sqdn. No. on White Background



Bumper Marking-3" O.D.
Co. & Vehicle No. on
White Background

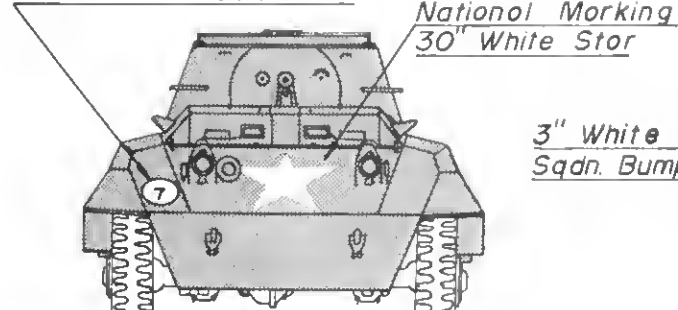


Constobulary Insignia



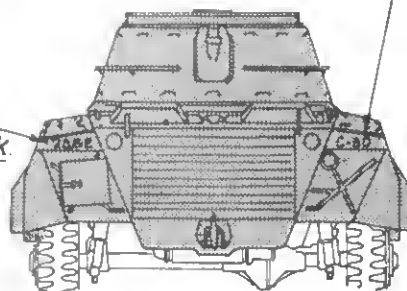
M-8, 'C' Troop, 82nd Cov. Recon. Sqdn. 2nd
Armd. Div. "OPERATION COBRA" 26, July 1944

Bridge Marking-12" Yellow
Circle with Block No. 7



3" White Co. & Vehicle
No. Bumper Marking

3" White Regt &
Sqdn. Bumper Mark



GERMAN VOLKSWAGEN RECONNAISSANCE COMPANY

One of the more interesting World War II. German reconnaissance units is the one which was organized with the light *Volkswagen Kübelwagen* car. With its air-cooled engine, full belly skid pan, and light construction, the *Kübelwagen* offered excellent cross-country agility with good reliability. Like its American counterpart (the Jeep), the *Volkswagen* provided good transportation for what was essentially a 'Scout Squad', organized around a light machine gun. While the German terminology for the *Volkswagen* equipped unit was '*Panzer-Aufklärungs*', it is obvious that the '*Panzer*' aspect was a complete misnomer. As numerous ex-GI's can affirm, the *Volkswagen* (and the Jeep for all that matter) was in no way 'armored'; it was instead nothing more than a cross-country vehicle which was to transport a dismounted scouting group organized similar to a Rifle Squad.

The *Volkswagen* Reconnaissance Company was organized under *KStN 1113 (f.G.)*, dated 1 November 1944, with three officers, 30 non-commissioned officers and 164 enlisted men. As indicated below, earlier versions of this *KStN* differed substantially in personnel and equipment, but little in structure and organization. The company was sub-divided into the following units:

- Headquarters Section
- Radio Squad
- 3 *Volkswagen* Reconnaissance Platoons
- 1 Heavy Weapons Platoon

The Company Headquarters was equipped with three light cars and three 'solo' motorcycles. In the 1943 (pre '*frei Gliederung*') organization, the three motorcycles were 350cc units, however, these were replaced by light 125cc motorcycles in the 1944 type organization. Two of this section's light cars were equipped with short range radio sets (designed to 'net' with the radios of the Platoons); these sets were operated by the section's two Messengers. The small Headquarters Section was designed to control and administer the company's activities. The Company Commander, usually an *Oberleutnant* (1st Lieutenant) or a *Hauptmann* (Captain) commanded from one of the cars, while the remaining two formed the small administrative part of the section, normally under the control of the First Sergeant.

The company was assigned a small, three-man Radio Squad for longer-range communications with higher headquarters units; this squad was given the designation '*Tornister-funktruppe g.Mw. (mot.)*', indicating that it was equipped with a pack-type radio which operated in the medium wave frequencies. This squad was motorized in a single *Volkswagen* light car, one of the Radio Operators acting as the driver. These Radio Squads were organized as 'package' units which could be easily attached or assigned as an entity for communications purposes.

Each of the three Reconnaissance Platoons was identically organized, except that the Second and Third Platoons had a senior non-commissioned officer as the Platoon Leader. The First Platoon Leader was normally a *Leutnant* (or 2nd Lieutenant), and he served as the company's second-in-command in the absence of the Company Commander. The platoons had a small, two-vehicle Headquarters; one of the light cars serving as the command car, equipped with a light radio to communicate with the Company Headquarters as required. The Platoon had three Reconnaissance Squads, each equipped with three *Kübelwagens* and one light machine gun (normally an *MG42*). This weapon, while designed to be used dismounted,

was mounted on a pedestal mount in one of the *Kübelwagens* for use while on the move. Other than the three light machine guns, the Platoon had no heavy weapons, and the Squads had to rely primarily on their 'scouting' abilities to avoid combat and obtain intelligence data. In the pre '*frei Gliederung*' organization, each of the Platoon's Squads had one additional car and one additional light machine gun. One can only assume that lack of personnel and changing reconnaissance concepts dictated the reduction in personnel and weapons in the 1944 organization.

The Fourth (or Heavy Weapons) Platoon provided the fire support to assist the Reconnaissance Platoons in the accomplishment of their duties. To do this, the Platoon had three Squads. The first and second of these Squads were equipped with tripod-mounted heavy machine guns; there were two such guns and six light cars in each Squad. When not emplaced on their tripods, the machine guns were mounted on two of the vehicular pedestal mounts, for use while on the march. The other squad vehicles carried the tripods, machine gun ammunition, and accessories to keep the squad's weapons operational. The Weapons Platoon's Third Squad was a mortar squad, equipped with two 8cm medium mortars. Each of these mortars and its crew was carried in a 2-ton medium truck; these trucks and the Headquarters's motorcycles were the only vehicles in the company which were not made by *Volkswagen*... In terms of employment, the two heavy machine gun squads were designed to provide supporting or covering fire over the scouting elements of the company. Each Squad, or even single machine guns, could be attached to a Reconnaissance Platoon Headquarters as required. The Squads could be used to provide massed fire into areas of suspected enemy activity while the scout squads observed for reactions. If the scouting elements became involved in combat, the two mortars could fire support missions with high explosive or smoke ammunition to help extricate the scouts from the combat, or they could probe suspected enemy positions with fire.

As a supplement (which is not shown in the accompanying charts), the *Volkswagen* Company could be assigned up to five extra Radio Squads. These possible attachments were designated in the *KStN* as '*leichte Funktruppe 30 Mw. (mot.)*' and each '*Truppe*' had one non-commissioned officer and two enlisted Radio Operators. They were each equipped with one 30 watt medium wave radio set, mounted in a *Volkswagen*. These supplemental squads served to increase the long range communications capability of the company, especially in operations on the Eastern Front.

One of the footnotes in the *KStN* indicates that the company was to have nine of its personnel trained and equipped as snipers. These nine men were to be distributed as follows: One NCO and two enlisted men were assigned in the Headquarters Section, and two enlisted men were provided for each of the Reconnaissance Platoons. Selected snipers could be useful in probing reconnaissance missions, sniping at selected targets to encourage enemy reactions (and thus intelligence about the enemy) or in eliminating enemy officers and NCO's as targets of opportunity.

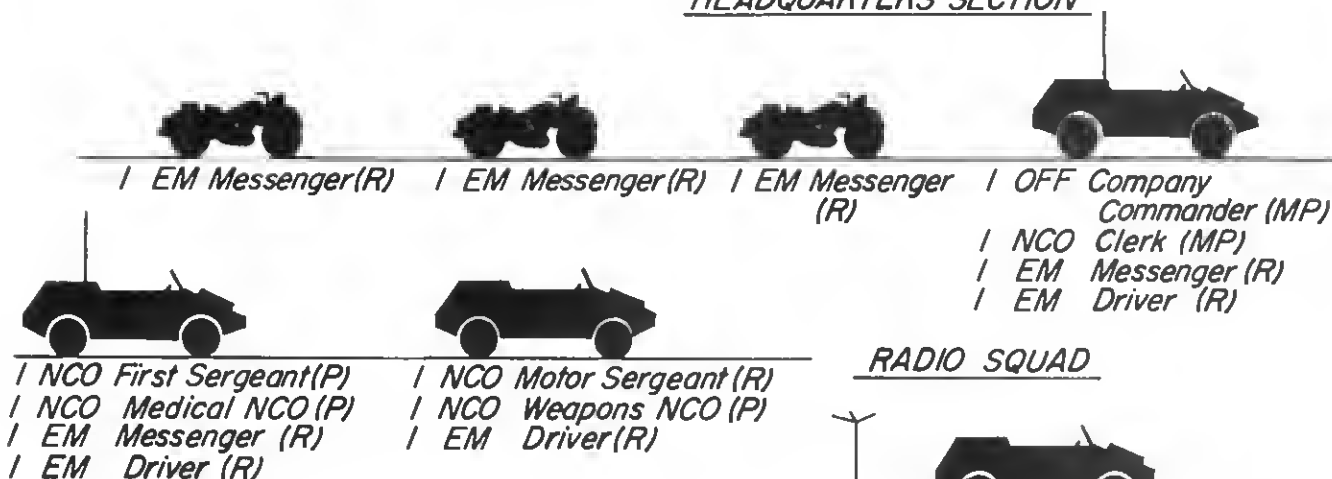
In terms of actual performance, little can be stated about the *Volkswagen*-equipped companies. Since *Aufklärungs*-battalions were extremely flexible in concept and assigned of sub-units, *Volkswagen* companies could be assigned to divisional reconnaissance battalions based on the type of combat to be encountered (preferably light to medium), the

Continued on Page 37

PANZERAUFKLÄRUNGS-KOMPANIE (VOLKSWAGEN)

KStN 1113 (f.G.) of 1 November 1944

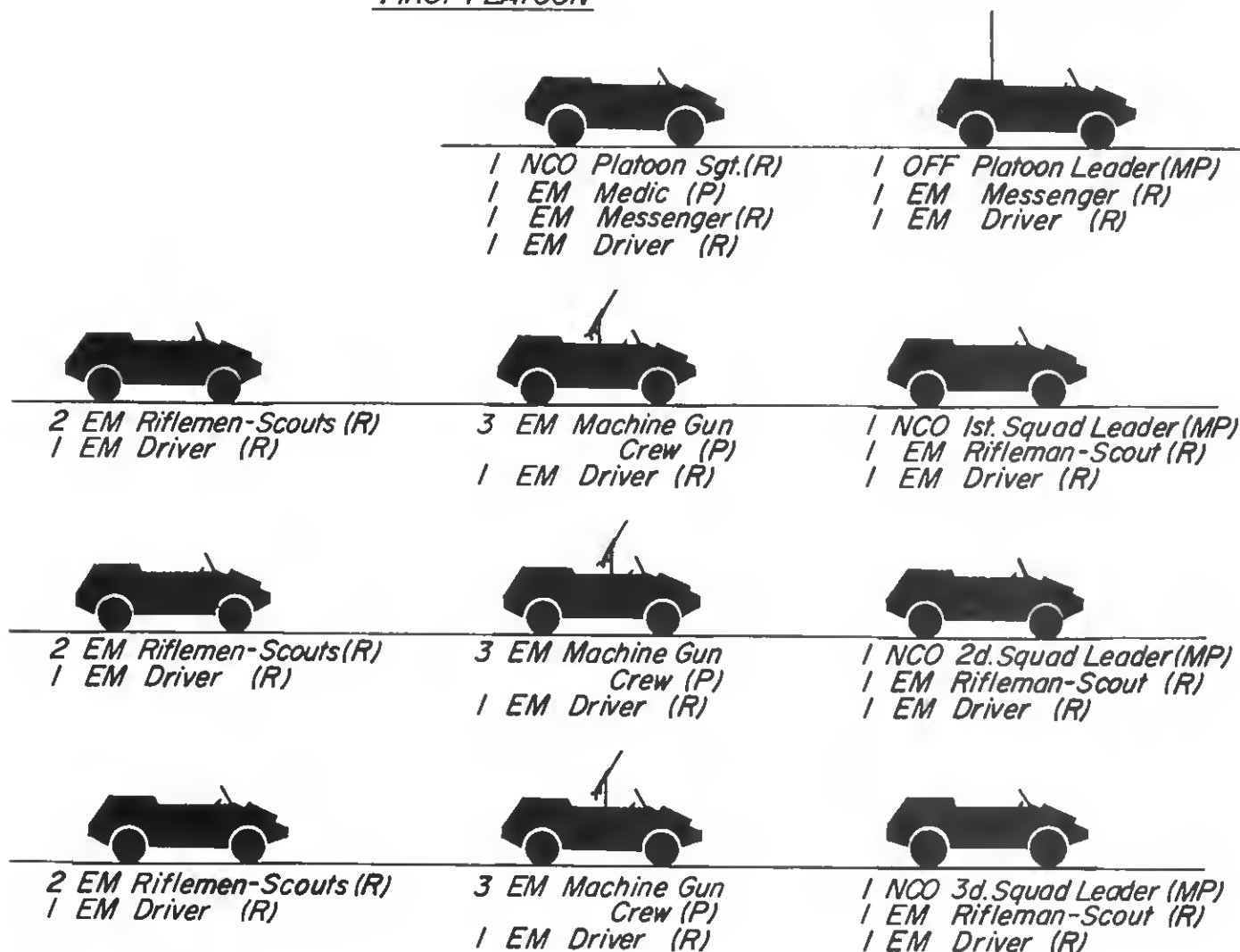
HEADQUARTERS SECTION



RADIO SQUAD

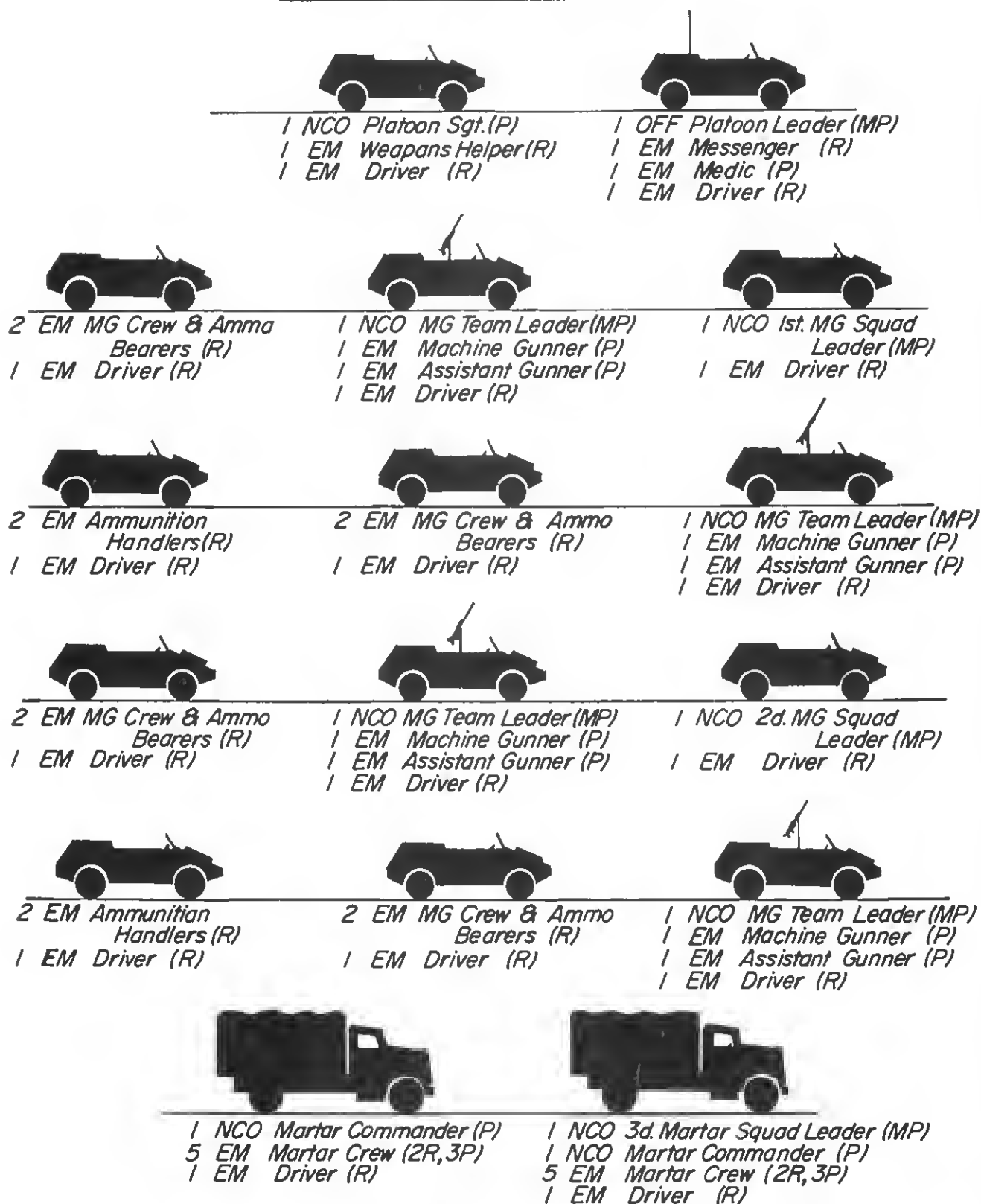


FIRST PLATOON



SECOND PLATOON and THIRD PLATOON are identical to the FIRST PLATOON, except that the Platoon Leaders are Senior NCO's.

FOURTH (HEAVY WEAPONS) PLATOON



Wargamer's News & Views

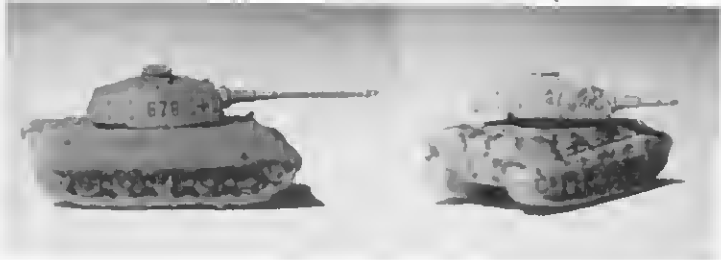
This new column is designed as a forum for miniatures wargamers, bringing together news of new products, new techniques and some editorial comments on the state-of-the-art. Reader participation is invited... if you're a miniatures wargamer with product news, ideas and tips about constructing playing boards and modifying vehicles, or even comments about rules and/or playing techniques, we'll be pleased to include them in this occasional column. We'll present the column as often as we accumulate enough new material or comments. With your help, this could be a regular feature...

Mainly covering new products in this installment, let's start with a couple of new releases from GHQ Microarmour. We have on hand some examples of new 'desert war' pieces. The Italians are represented by some very 'petite' (to borrow an overused word) CV 3-33 tankettes (identified as 'IT3'). Beautifully cast, these are all of 7/16th of an inch long! When camouflaged, they're easy to lose on the playing board, but their detail and accuracy is superb. The CV 3-33 saw combat through the early years in the desert, and they pair naturally with GHQ's M 11-39 and M 13-40 medium tanks.... a 7-pack of these little tankettes sells for \$2.25.

The Germans have received some fire support in the form of 75mm armed, 8-wheel armored cars (of the *Sd. Kfz. 232* variety). Castings are clean and nice, and these look swell when painted. The crew compartment looks awfully empty though and a couple of crew members (cast into the empty compartment) would have looked nice. These are identified by GHQ as G36 and a 5-pack sells for \$2.25.

Other not quite so new GHQ pieces include 'US6' which is a nicely done M4A1 Sherman medium tank. Separate 75mm turrets and nice detailing make these especially attractive. The Soviets are represented by 'R8', which is a miniature of the SU-122 assault gun. Barrels are separate (and need to be epoxied in place) and these vehicles sport four fuel drums on the rear decking. Like the 'US6', a 5-pack of the 'R8' vehicles sells for \$2.45.

A few weeks back, this writer was invited down to the Krasel Industries plant in Santa Ana, California. There, I was shown the newest Microscale decal product... a complete line of decals for wargaming miniature vehicles! If anyone had mentioned decals for wargaming miniatures to me before this visit, I frankly would have told him he was crazy. I have long been resigned to hand painting markings and insignia on my miniatures; in fact, this has been taking far too much of my time away from the gaming boards. However, up to now there's



Shown above are two examples of GHQ's Koemigstigers illustrating the new Microscale decals for German armor. Note the outline style turret numbers on the tank with the broken barrel. These are test samples courtesy of Microscale....



Above are two side views of a GHQ T34/85 tank camouflaged and then marked with Microscale's new decals. These include patriotic slogans, red stars and individual numbers for a wide variety of Soviet tanks.

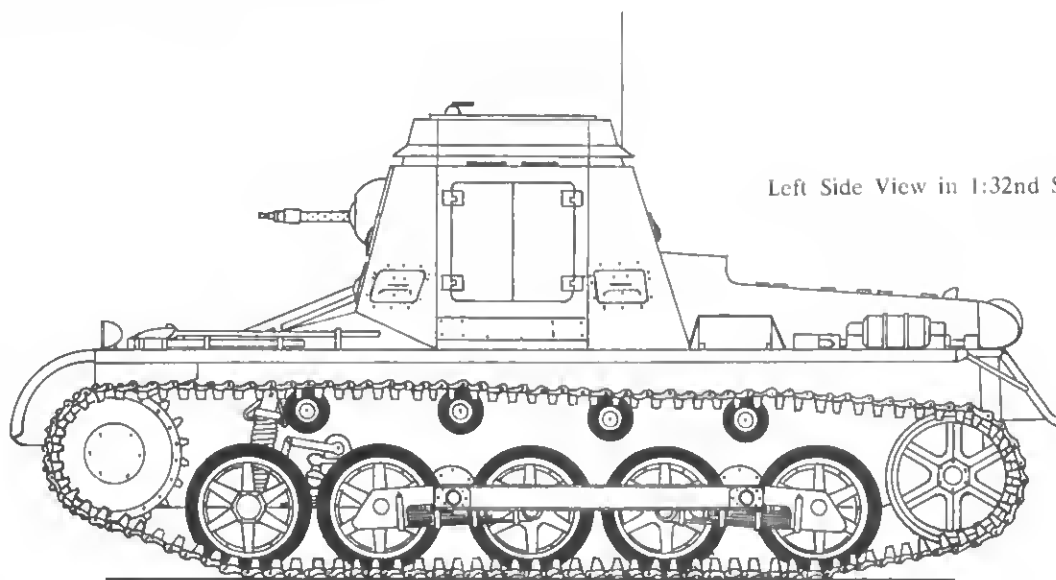
been no other way to apply turret numbers and crosses to my German vehicles, or white stars to my American vehicles. This has all been changed, and hand painting is on its way to becoming a thing of the past...

Here's what has happened. Microscale has taken the artwork for their large scale armor model decals and has reduced it in size until it is in scale for 1:285th equipment. I gather that this reduction wasn't easy... a lot of care had to be exercised in order to still read the turret numbers or patriotic slogans used on Russian tanks. Another problem that Microscale has solved was involved with the actual printing of the decals. First of all, these are *multiple-color* decals! By using care in setting up their equipment, Microscale has printed multiple color decals in perfect registration! I didn't believe it until I was handed a magnifying glass and I was able to see the miniature white hammer-and-sickle inside of one of the red stars, which itself measured less than 1/64th of an inch across. To say that I was impressed is an understatement to say the least.

As many of our readers may not be familiar with the application techniques needed to apply decals this small, Microscale provided me with some tips and information on how to accomplish this easily. First of all, you'll need two additional Microscale products... Micro Coat Gloss decal primer and Micro Coat Flat for a final coat. After you've painted your miniatures and camouflaged them, let them dry thoroughly. Then paint them with Micro Coat Gloss. This seals the paint pores and provides an absolutely smooth surface for the decals. Next, when dry, cut out and apply the decals, following the directions on the decal sheet. When the decals have thoroughly dried, paint the model with a coat of the Micro Coat Flat. This covers the decals and completely hides the decal film. Believe it or not, the resulting decal job looks like hand painting... only four times better, with readable lettering and numbers. I know that this sounds like a complicated process to go through to apply markings to a miniature vehicle, but in actual practice, it goes quite quickly. Using an air brush to paint the Micro Coat Gloss takes only a few minutes to paint an entire company of vehicles. The decals on the first tank are drying while others are being applied, and when all vehicles are done, it takes only a few minutes to paint the company with the flat finish.

Microscale indicated to me that their new decals should be on the market by the time you read this, so if this sounds like something you can use to provide distinctive markings to your miniature armored force, look for their products at your local hobby shop. The price per decal sheet is quite inexpensive when you see the fantastic job that results, and the large number of vehicles that you can do with each sheet of decals.





Left Side View in 1:32nd Scale

EDITOR'S NOTES.... The recent addition of a secretary to our Editorial Staff means that we've been able to make some headway in answering our correspondence backlog. We will be making every effort to answer reader letters as soon as possible, but there's a few rules that we must insist on, in order to cut down on secretarial time and expense. If you're writing to a specific department here at Baron Publishing, please mark your envelope and the top (heading) of your letter with the name of the department... for example: Attn: Circulation Dept., Attn: Editor, Attn: AFV Inquiry, etc. When you comply with

this requirement, your letter will reach the correct person on our staff, without anyone else having to read the letter.

When you write to a department of our company, expecting an immediate (or prompt) reply, please enclose a self-addressed stamped envelope for the reply... this cuts down on the secretarial time needed to answer your letter and saves money on our end too. We'll try our very best to answer reader questions, and we intend to continue to print comments and more interesting letters in the 'Muzzle Blast' section.

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advocates of one contend that the infantry is the principal arm and that all others merely exist to serve it... the protagonists of the other school... prefer to combine the armored forces in purely mechanized units and use them primarily against the enemy's flanks and rear or on large-scale raids that reach far into hostile territory.'

'In point of fact, various unresolved technical difficulties handicap this adventurous conception to such an extent that, for the time being, it is better to compromise between these two schools of thought. Therefore, we seek a solution that will permit the mechanized force to support the other arms and at the same time take full advantage of its strategic and tactical potentialities.'

'The tank units that are designed for strategic purposes may also be used tactically, either as entire units or divided. On the other hand, it would be impracticable to combine the division tank battalions for strategic employment. Aside from the fact that their equipment is not suitable for missions of this kind, the combined force would lack the requisite headquarters and could not produce them at will.'

'Above all, we must be careful not to hamper the development of the mechanized arm by adopting a rigid and inflexible organization or by saddling it with obsolete tactical conceptions.'

'Modern tank forces must not be developed with the object of using them in direct support of the slow laborious attack of the infantry. ...the German regulations say much the same thing in a different way: 'The ground is of decisive importance (for the direction of the attack)* Close contact with the infantry will deprive the tanks of their advantage in speed and possibly sacrifice them to the hostile defense.'

'The greater the speed of an arm on the march and in combat, the more important that it and its commanders be trained in units that are organized in peace the same as they would be in war.'

'Cooperation between tanks and infantry may be carried out in a number of ways:

1) The tanks attack in advance of the infantry. The infantry follows, taking advantage of the neutralizing effect of the tank attack upon the hostile infantry and machine guns. The infantry supports the tanks by assaulting positions known or suspected of harboring anti-tank guns. This situation will occur if the attacking force has to cross large exposed areas in gaining its objective.

2) The tanks attack simultaneously with the infantry. In this case, the infantry supports the attack in the same manner as above. This method is suitable if the enemy is close and the terrain favorable for the attack.

3) The infantry attacks in advance of the tanks. In this case the infantry must be initially supported by other arms, especially by artillery and combat engineers. This method should be used if obstacles, such as rivers or blocked roads, prevent the immediate employment of tanks and if bridgeheads or passages must first be established.

4) The tanks, jumping off from a different zone, attack obliquely to the direction of the attack of the infantry. This method is contingent upon a suitable terrain.'

'In crossing the hostile zone of combat, the tanks must clear a path for the infantry by destroying recognized targets - primarily anti-tank guns, heavy arms, and machine guns - and neutralizing suspected localities. Merely to push through the hostile combat zone with the idea of shattering the enemy's morale is not enough; the tanks must break the enemy's strength by full use of their weapons and open a gap in the hostile defense system.'

'Rarely, if ever, will the tank attack completely wipe out the resistance of the hostile infantry. Individual machine guns will remain undiscovered or come to life again. Tanks can materially facilitate infantry action and, in many cases, will be indispensable in preparing the infantry attack, but they cannot take over the infantry's role in combat. The infantry's job lies in an immediate exploitation of the tank attack by rapid advance. Nor does the foot soldier pause until the ground seized by the tanks is definitely cleared of the enemy.'

'While advancing with the tanks, the infantry must maintain formations that permit it to move rapidly and must display signs that will enable the tanks to identify it as friendly infantry, especially in twilight and fog.'

'Cooperation is necessary, for, like any other arm, the tank is incapable of solving all combat problems by itself. This necessity for cooperation imposes certain obligations both upon the armored forces and the other arms. These obligations are especially binding upon the arms which are suited for habitual cooperation with tanks. On this point, the German regulations state: 'The commander must synchronize tank operations and their support by the other arms. Within the tank zone of attack, the action of the other arms depends upon that of the tanks.'

'When tank units attack as part of an army, the division artillery assists mainly by firing a preparation; in this it must put forth its utmost effort. The shorter the artillery preparation, the more effective. If enough artillery is not available in the zone of attack, and if the concentration of adequate artillery and ammunition is so conspicuous

Continued on the next page

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Heinz Guderian on Armored Forces (Continued from preceding page)

and involves so much time as to render a surprise effect doubtful, it is advisable to dispense entirely with the preparation. In event of this, the artillery will be charged with guarding the tanks and firing on any targets that might endanger the attack.'

'As a rule the artillery must shift its fire out of the zone of attack simultaneously with the opening of the tank assault. It may then box off the flanks of the zone of attack, shell suspected anti-tank positions, or engage localities unsuitable for tank attack, such as woods and steep slopes. These tasks may be carried out partly with high explosive shells and partly with smoke projectiles. While this requires great attention and expert fire control, it is facilitated by modern means of communication, especially radio.'

'This type of support does not reach very deep into the hostile zone of action. Furthermore, it is impossible for the artillery observation posts to keep up with the rapid development of the tank attack. And, finally, an aggressive artillery would not be content to see itself limited to such a small battle role. Actually it is the aim of the artillery of all armies to participate in the tank attack and, with this end in view, to motorize its components. Motorized artillery may be either motor-drawn or self-propelled. Drawn artillery has been the rule so far. Its advantage lies in the divisibility of the gun and tractor; the tractor can be easily exchanged and does not have to be taken into the firing position. The question of weight is of little consequence in motor-drawn artillery.'

'The self-propelled mount is something new; it possesses the advantage of constant readiness to move. It gives a great radius of action to the individual gun and to the entire battery. It also has a certain degree of armor protection. Self-propelled artillery seems to be a desirable companion of tank units.'

'If our attacks are to succeed, then the other weapons must be adjusted to fit in with our scale of time and space in those attacks. ...in order to exploit our successes, the necessary supporting arms (must) be made as mobile as we are...'

'The swift execution of the tank attack being of decisive importance, the auxiliary weapons of tank units must be as fast as the tanks themselves. Auxiliary weapons designed for cooperation should be combined with them into permanent units comprising all modern arms. This should not be construed as meaning that the whole army must be motorized. Nevertheless, it must be emphasized that armored forces without speedy auxiliary weapons are incomplete and will not be able to realize their maximum potentialities.'

Thus concludes this discussion of Guderian's theories of armored forces. As he is regarded as the father of the German armored forces, many of the points presented in this study were amply proven by the success of the Blitz attacks early in the Second World War. It has been the objective of this study to present to the armor enthusiast not only the statements of Guderian's thoughts but also the rational behind their development.

(* - Parentheses are Guderian's)

REFERENCES:

Guderian, Major General Heinz: *Armored Forces* [1937], in 'The Infantry Journal Reader', edited by Col. Joseph I. Green (Doubleday & Company, New York, 1943)

Guderian, General Heinz, *Panzer Leader*, translated by Constantine Fitzgibbon (E. P. Dutton & Company, New York, 1952)

Armor Models in Review (Continued from Page 12)

about 6-inches too short in length. It is accurate in proportion though, and I would guess that it scales out to about 1:49th scale.

Detail on the kit is superb, and is the kind of detail that we've mainly seen on larger scale models. For example, the tracks in the kit are nicely detailed on the inside as well as the outside. The hull and turret coaxial machine guns are not just barrels stuck onto mounts on the exterior of the tank... instead, they are complete with receivers, triggers, grips and drum magazines. The driver's compartment is complete with a seat, foot pedals and twin control sticks. The engine and transmission consists of 18 separate parts that duplicate the original to a 'T'. It's difficult to imagine how any more detail could have been provided... and I'm more than a little amazed that all this detail could have been crammed into a 1:48th scale kit.

The running gear on the Bandai T34 is of the early type, with split rubber tires mounted on smooth dished road wheels. I'm now investigating how hard it would be to fabricate the late style steel wheels, so that I can add one or more 'replacement' wheels on my model.... perhaps turned-down wheels from the Revell kit would work?

The are four figures provided in the kit. Two are of standing crew members, one is a seated driver and the fourth is in a kneeling position which could be positioned receiving a 76mm shell from one of the standing figures on the ground. Ten 76mm shells are provided, and although these scale out as being too long, they can be easily shortened to accurately duplicate the real thing. Decals in the kit provide for both

Continued on Next Page

Color 'n Camouflage: M-8 Armored Cars (Continued from Page 28)

and it was painted in 3-inch high white numbers. The familiar 'U.S.A.' which normally preceded the number was absent on this vehicle.

A special Constabulary insignia was shown on the turret sides and the front of the M-8 in order to prominently identify it as a part of the 'Police' force. This emblem was 15-inches in diameter, and it was centered on the frontal slope of the upper hull and on both sides of the turret. The insignia were in three colors and were derived from the Constabulary shoulder sleeve insignia. The background circle was white, bearing a diagonal red lightning bolt which was superimposed over a blue letter 'C'. (The color arrangement quoted here is based on the interpretation of black and white photographs and is given with some reservations. Reader corrections are invited.)

On the front and rear of the M-8 were painted typical unit identification codes, but with a major difference in order to provide more rapid identification. Instead of the normal white lettering on an olive drab background, the color scheme was reversed. White rectangles were painted on both sides of the lower hull in the front and at the top of the rear fenders on the rear of the vehicle. On these white backgrounds, the codes were painted in olive drab (and in some cases, black) paint. On the left side, the number '2' (identifying the Regiment) and the number '42' (denoting the Squadron) were separated by a miniature version of the Constabulary insignia. On the right side, the lettering 'D-22' identified the 22nd vehicle of 'D' Troop. These codes were applied in 3-inch high characters.

A photograph of this particular M-8 Armored Car appears on the cover of this issue; this photograph was taken on 26 May 1948, near Grafenwöhr, Germany, during a U.S. 1st Infantry Division exercise.

As order returned to the occupied zones of Germany (and the rest of the world), the need for a large Constabulary force dwindled, and gradually, the U.S. units were disbanded, or reconverted to combat formations in the case of the 2nd Constabulary Regiment. This took place on November 16, 1948, when the unit was redesignated as the 2nd Armored Cavalry Regiment, joining the newly-formed U.S. Seventh Army.

The German Volkswagen Reconnaissance Company (Continued from Page 30)

type of terrain and the available road net. It is obvious that this company could not be used to replace an armored reconnaissance unit, as the non-armored vehicles could not perform in an 'armored environment' against enemy vehicles. However, in fairly open terrain, against light enemy resistance, and with a good road net, the Volkswagen Reconnaissance Company would have been an effective organization.

Armor Models in Review (Continued from Preceding Page)

summer and winter schemes. There are the common 'Za Stalina' and 'Za Rodnie' slogans (transliterations are mine), as well as a selection of individual vehicle numbers, unit diamonds and a couple of red stars. I'm not sure where Bandai came up with a couple of their schemes though.

This is an excellent kit, and I'm eagerly awaiting more Russian models from Bandai. I understand there's a KV-1 and an SU-85 coming next. Our review sample of this kit was provided by International Hobby Supply, whose advertisement appears elsewhere in the magazine.

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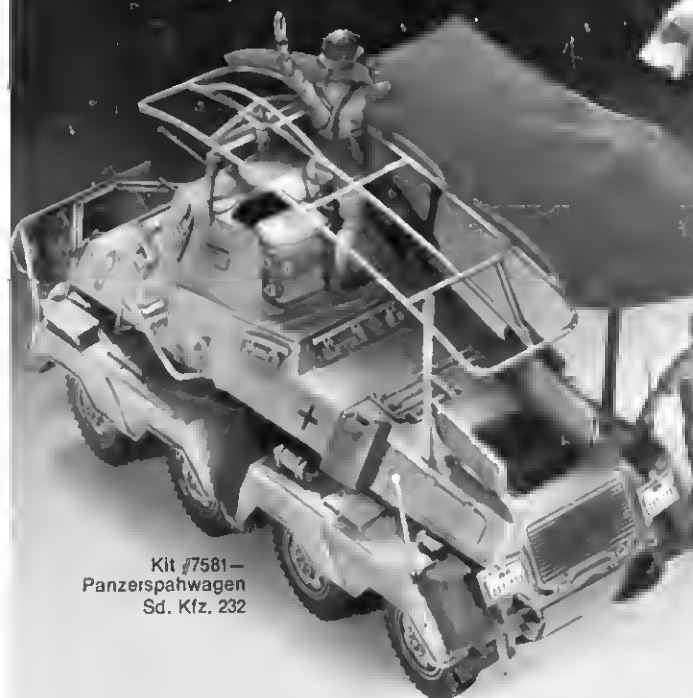
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